



Des Gillen President BP-Husky Refining LLC 4001 Cedar Point Road Oregon, OH 43616 P 567.698.4529 des.gillen@se1.bp.com

City of Toledo Division of Environmental Services 348 S. Erie Street Toledo, OH 43604 Attn.: Peter Park

RE: CMS Summary & Data Assessment Report – 4th Quarter 2021

Dear Sir or Madam:

Attached is the revised CMS Summary Report and Data Assessment Report for BP-Husky Refining LLC for the period of October 1, 2021 through December 31, 2021.

CMS Summary Report (Attachment A)

A complete list of emissions units and pollutants monitored are in Table 1; Summary Reports are included in Attachment A. Excess Emissions and Monitoring Systems Performance Report is not required under 40 CFR 60.7(d) if the total duration of excess emissions is less than 1% and the CMS downtime is less than 5% of the total operating time for the quarter. Unless where noted in Table 1, these criteria were met for the units listed.

Table 1. Emission Units and Pollutants Monitored

| Location/Emission Unit | Parameter | Quarter 4 2021 Downtime (% unit operating time) | Notes |
|----------------------------------|--------------------|--|-------|
| TIU Fuel Gas Mix Drum | | | |
| - B015 - Crude 1 Furnace | | 0.00 | |
| - B017 - Coker 2 Furnace |] | 0.00 | |
| - B019 - Crude Vac 2 Furnace |] | 0.00 | |
| - B022 - Naphtha Treater Furnace |] | 0.00 | |
| - B029 - DHT A-Train Furnace | 1 | 0.00 | |
| - B030 - BGOT Furnace | H₂S in Fuel Gas | 0.00 | |
| - B031 - Vac 1 Furnace | Gas | 0.00 | |
| - B032 - Coker 3 Furnace |] | 0.00 | |
| - B033 - East B-GOT Furnace |] | 0.00 | |
| - B034 – East Alstom Boiler | 1 | 0.00 | |
| - B035 – West Alstom Boiler | 1 | 0.00 | |
| - P007 - FCC/CO Boiler | | 0.00 | |

CMS Summary & Data Assessment Report – 4Q2021

| Location/Emission Unit | Parameter | Quarter 4 2021 Downtime (% unit operating time) | Notes |
|--|------------------|--|---------------------|
| TIU Fuel Gas Mix Drum | | | |
| - B015 - Crude 1 Furnace | | 3.35 | |
| - B019 - Crude Vac 2 Furnace | | 3.35 | |
| - B022 - Naphtha Treater Furnace | | 3.35 | |
| - B029 - DHT A-Train Furnace | Total Sulfur in | 3.35 | |
| - B030 - BGOT Furnace | Fuel Gas | 3.35 | |
| - B031 - Vac 1 Furnace | | 3.35 | |
| - B032 - Coker 3 Furnace | | 3.37 | |
| - B033 - East B-GOT Furnace | | 3.35 | |
| - B034/B035 – East & West Alstom Boilers | | 3.35 | |
| East Side Fuel Gas Mix Drum | | | |
| - B008 - Iso 2 Feed Heater | H₂S in Fuel | 0.00 | |
| - B009 - Iso 2 Stabilizer Reboiler | Gas | 0.00 | |
| - B010 - Iso 2 Splitter Reboiler |] | 0.00 | |
| B036 - Reformer 3 Furnace | H ₂ S | 0.00 | |
| P003 - East Flare (see note A) | H ₂ S | 0.18 | |
| P003 - East Flare | Total Sulfur | 0.09 | |
| P004 – West Flare Vent Gas (see note A) | H ₂ S | 1.81 | |
| P004 – West Flare "C-Valve" Vent Gas | H₂S | 0.00 | |
| P004 – West Flare Vent Gas | Total Sulfur | 0.32 | |
| P004 – West Flare "C-Valve" Vent Gas | Total Sulfur | 3.35 | |
| B036 – Reformer 3 Furnace | NOx | 0.05 | |
| P007 – FCCU/CO Boiler Bypass (see note B) | CO | 0.00 | |
| P007 – FCCU/CO Boiler Bypass (see note B) | NOx | 0.00 | |
| P007 – FCCU/CO Boiler Bypass (see note B) | SO ₂ | 0.00 | |
| P007 – CO Boiler Exhaust | CO | 0.41 | |
| P007 – CO Boiler Exhaust | NOx | 0.41 | |
| P007 – CO Boiler Exhaust | SO ₂ | 0.41 | |
| P009 - Sulfur Recovery Unit with #1 (see note D) | SO ₂ | 0.50 | >1% EE ^D |
| P037 - Sulfur Recovery Units #2 & #3 | SO ₂ | 0.27 | >1% EE ^D |
| B034 – East Alstom Boiler (see note C) | NOx | 0.05 | |
| B035 – West Alstom Boiler (see note C) | NOx | 0.41 | |

Note A: P003/P004 East & West Flare

The attached H_2S tables identify all emissions in excess of the Subpart Ja H_2S limit of 162 ppm $_V$ on a 3-hour rolling average. If an event did not occur for 3 consecutive hours, then it does not meet the 3-hour averaging requirement and therefore is not considered excess emissions. If a 3-hour event exceeds the 100,000 ppm $_V$ span limit of the H_2S CMS, then the Total Sulfur analyzer data was used for the H_2S value.

Note B: P007 – FCCU/CO Boiler Bypass

The purpose of these CEMS are to continuously monitor the listed (CO, NOx, & SO₂) emissions from the FCCU Regenerator exhaust in the event of a CO Boiler bypass while there is feed to the FCCU. Otherwise, compliance with the listed limits for the FCCU is determined from continuous emissions monitoring of the CO Boiler Exhaust stack. Although this source is not subject to 40 CFR Part 60, Section C.12.(d)(7) of P0104782 (as set forth by Permits-to-Install 04-01290 and P0105902) requires monitoring per 40 CFR Part 60.11. As

CMS Summary & Data Assessment Report - 4Q2021

noted in Section C.12.(e)(4) of P0104782, the refinery has opted to follow the reporting requirements under 40 CFR 60.7. 40 CFR 60.7(c) requires the submission of an Excess Emissions and Monitoring Systems Performance Report and Summary Report Form.

Note C: B034/B035 East & West Alstom Boiler

The attached data tables include supplemental reporting for NOx CEMS records required by 40CFR49b(i).

Note D: P009 - Sulfur Recovery Unit with #1

This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

Details of all downtime or excess emission incidents are provided in the summary tables in Attachment A.

<u>Data Assessment Report (Attachment B)</u>

In accordance with the terms and conditions of their permits, Attachment B includes the Continuous Emission Monitor (CEM) Data Assessment Report (DAR) for this quarter. Table 2 below is a summary of Cylinder Gas Audits conducted this quarter. Where noted in Table 2, Relative Accuracy Test Audits (RATAs) were conducted this quarter; these reports were submitted previously via Air Services.

Table 2. Cylinder Gas Audit Summary

| Location/Emission Unit | Parameter | Notes |
|--|---|-------|
| East Side Fuel Gas Mix Drum (B008, B009, B010) | H2S | |
| TIU Fuel Gas Mix Drum (B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007) | H ₂ S | |
| B036 - Reformer 3 Heater H2S CMS | H₂S | |
| P003 - East Flare | H₂S | |
| P004 - West Flare | H₂S | |
| P003 - East Flare (low & high ranges) | Total Sulfur | |
| P004 - West Flare (low & high ranges) | Total Sulfur | |
| TIU Fuel Gas Mix Drum (B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007) | Total Sulfur | |
| B036 - Reformer 3 NOx/O2 CEMS | NOx, O ₂ | |
| B034 - East Alstom Boiler | NOx, O ₂ | |
| B035 - West Alstom Boiler | NOx, O ₂ | |
| P007 - FCCU/CO Boiler | SO ₂ , NOx, CO, O ₂ | |
| P007 - FCC Regen Line | SO ₂ , NOx, CO, CO ₂ , O ₂ | |
| P009 - SRU #1 | SO ₂ , O ₂ | |
| P037 - SRU #2 & #3 (TRP SRU) | SO ₂ , O ₂ | |

The DAR also includes out-of-control (OOC) times for the FCCU/CO Boiler CO CEMS, FCC Regen Line CO, O₂, & CO₂ CEMS, the SRU#1 SO₂ & O₂ CEMS, and the TRP SRU SO₂ & O₂ CEMS based on the OOC requirements defined by the MACT general requirements, 40 CFR Part 63.8(c)(7).

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CEMS calendar tons reporting

In accordance with the Title V permit, Table 3 includes calendar tons per quarter for certain pollutants for Emission units B036, P007, P003, and P004.

Table 3. CEMS Reporting requirement with calendar tons

| Page | Citation | EU | Description | Language | Tons |
|------|----------------------------|-------------------------|------------------|--|--------|
| | | | | Units subject to NSPS Ja NOx monitoring - quarterly reports require "the total | |
| 63 | B.5.b)(2)b.v | B036 | Reformer Heater | NOx emissions for the calendar quarter (tons)" to be included with the | |
| | | | | quarterly EER for NOx CEMs | 7.57 |
| 101 | c.12.e)(2)b.v | P007 | FCCU | Quarterly EER required for SO2 CEM requires "the total SO2 emissions for | |
| 101 | C. 12.e)(2)b.v | F 00 <i>1</i> | FCCO | the calendar quarter (tons)" to be included | 141.83 |
| 102 | c.12.e)(4)b.v | P007 | FCCU | Quarterly EER required for NOx CEM requires "the total NOx emissions for | |
| 103 | C. 12.e)(4)b.v | F 00 <i>1</i> | FCCO | the calendar quarter (tons)" to be included | 56.44 |
| 200 | c.20.e)(2)b.v | P037 | SRU 2/3 | Quarterly EER required for SO2 CEM requires "the total SO2 emissions for | |
| 290 | 6.20. 6)(2)b.v | F 037 | 3110 2/3 | the calendar quarter (tons)" to be included | 10.99 |
| 120 | c.36.e)(4)b.v | D034/D038 | Alstom Boilers | Quarterly EER required for NOx CEM requires "the total NOx emissions for | |
| 420 | C.30.e)(4)b.v | D034/D030 | AISTOITI DOILEIS | the calendar quarter (tons)" to be included | 7.71 |
| 105 | c.40.e)(5)b.v | D003/D00/ | East/West Flare | Quarterly EER required for H2S CEM requires "the total hydrogen sulfide | |
| 465 | C.40.e)(5)b.v | F 003/F 00 ² | East/West Flate | emissions for the calendar quarter (tons)" to be included | 1.66 |
| 107 | 0.40 0\/6\b.v | D003/D00/ | East/West Flare | Quarterly EER required for Total Sulfur CEM requires "the total sulfur | |
| 487 | c.40.e)(6)b.v | P003/P002 | Easi/west Flare | emissions for the calendar quarter (tons)" to be included | 6.49 |

If you have any questions concerning this report, please contact Joan Anderson (joan.anderson@bp.com or 567-698-4405), or Hannah Placzek (Hannah.placzek@bp.com).

Based on information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

Sincerely,

Des Gillen
90F20640AD13450...

Des Gillen

President - BP-Husky Refining LLC

Attachment A – CMS Summary Report Attachment B – Data Assessment Report

Attachment A – CMS Summary Report

| Pollutant: | H_2S |
|------------|--------|
|------------|--------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: Crude 1 Furnace (0448020007B015)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CMS Perfomance Summary | |
|--|---------------|--|--------------|
| Duration of excess emissions in reporting period due to: | | CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0.36 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 |
| Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is | s 1 percent o | or greater of the total operating time or the total CMS downtime is | 5 percent of |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| | DocuSigned by: |
| Signature: | Des Gillen |
| | 90F20640AD13450 |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |
| | |

¹ Form described in 40 CFR 60.7 (d)

Pollutant: H₂S

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: **BP-Husky Refining LLC**

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

4001 Cedar Point Road, Oregon, Ohio 43616 Address:

Siemens Maxum II, SN: 009300 **Monitor Manufacturer and Model No.:**

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: Coker 2 Furnace (0448020007B017)

Total Source Operating Time in Reporting Period²: 1,956 hr

| Emission Data Summary | | CMS Perfomance Summary | |
|--|------|--|--------------|
| 1. Duration of excess emissions in reporting period due to: | | 1. CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0.41 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 |
| 2 Record all times in hours. | | | |
| | • | r greater of the total operating time or the total CMS downtime is eport form and the excess emission report shall be submitted. | 5 percent of |

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: -Des Gillen Des Gillen Signature: Title: President - BP-Husky Refining LLC 1/31/2022 Date:

¹ Form described in 40 CFR 60.7 (d)

| Pol | lluta | nt: | Has | S |
|-----|-------|-----|-----|---|
| | | | / ` | _ |

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

BP-Husky Refining LLC Company:

0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average **Emission Limitation:**

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: Crude Vac 2 Furnace (0448020007B019)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CMS Perfomance Summary | |
|--|------|--|--------------|
| 1. Duration of excess emissions in reporting period due to: | | 1. CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0.36 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 |
| | • | or greater of the total operating time or the total CMS downtime is | 5 percent of |

greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen Des Gillen Signature: Title: President - BP-Husky Refining LLC 1/31/2022 Date:

¹ Form described in 40 CFR 60.7 (d)

| Pollutant: H ₂ S | S |
|-----------------------------|---|
|-----------------------------|---|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

BP-Husky Refining LLC Company:

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Siemens Maxum II, SN: 009300 **Monitor Manufacturer and Model No.:**

Date of Latest CMS Certification or Audit: 11/16/2021

Naphtha Treater Furnace (0448020007B022) **Process Unit(s) Description:**

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CMS Perfomance Summary | |
|--|------|---|------|
| 1. Duration of excess emissions in reporting period due to: | | CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / | 0.36 | 3. [Total CMS Downtime] x (100) / [Total source | 0.00 |
| [Total source operating time] % ³ | 0.50 | operating time] % ³ | 0.00 |
| 2 Record all times in hours. | | | |
| ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of | | | |

greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen Des Gillen Signature: Title: President - BP-Husky Refining LLC 1/31/2022 Date:

¹ Form described in 40 CFR 60.7 (d)

| Pollutant: | H_2S |
|------------|--------|
|------------|--------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: DHT A-Train Furnace (0448020007B029)

Total Source Operating Time in Reporting Period²: 2,209 hr (TIU fuel gas was combusted for 2,209 hours and

natural gas was combusted for 0 hours for a total of

2,209 hours this quarter)

| Emission Data Summary | | CMS Perfomance Summary | |
|--|---|--|--------------|
| Duration of excess emissions in reporting period due to: | | CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 |
| 2 Record all times in hours. | | | |
| | | or greater of the total operating time or the total CMS downtime is report form and the excess emission report shall be submitted. | 5 percent of |

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |
| | |

¹ Form described in 40 CFR 60.7 (d)

| Pollutant: | H_2S |
|------------|--------|
|------------|--------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: BGOT Furnace (0448020007B030)

Total Source Operating Time in Reporting Period²: 2,209 hr (TIU fuel gas was combusted for 2,209 hours and

natural gas was combusted for 0 hours for a total of

2,209 hours this quarter)

| Emission Data Summary | | CMS Perfomance Summary | |
|--|---|--|--------------|
| 1. Duration of excess emissions in reporting period due to: | | CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 |
| 2 Record all times in hours. | | | |
| | | or greater of the total operating time or the total CMS downtime is report form and the excess emission report shall be submitted. | 5 percent of |

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:
Des Gillen

Docusigned by:
Dus Gillen

90F20640AD13450...

Title:
President - BP-Husky Refining LLC

1/31/2022

¹ Form described in 40 CFR 60.7 (d)

Pollutant: H₂S

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: <u>Vac 1 Furnace (0448020007B031)</u>

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CMS Perfomance Summary | |
|---|------|---|------|
| 1. Duration of excess emissions in reporting period due to: | | CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / | 0.36 | 3. [Total CMS Downtime] x (100) / [Total source | 0.00 |
| [Total source operating time] % ³ | 0.30 | operating time] % ³ | 0.00 |
| 2 Record all times in hours. | | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:
Des Gillen

Docusigned by:
Des Gillen

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

Pollutant: H₂S

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: Coker 3 Furnace (0448020007B032)

Total Source Operating Time in Reporting Period²: 2,194 hr

| Emission Data Summary | | CMS Perfomance Summary | |
|---|------|---|------|
| 1. Duration of excess emissions in reporting period due to: | | 1. CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / | 0.36 | 3. [Total CMS Downtime] x (100) / [Total source | 0.00 |
| [Total source operating time] % ³ | 0.30 | operating time] % ³ | 0.00 |
| 2 Record all times in hours. | • | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

Des Gillen

Des Gillen

Des Gillen

Des Gillen

Title: President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

Pollutant: H₂S

Reporting Period Dates: From: October 1, 2021 To: December 1, 2021

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: East BGOT Furnace (0448020007B033)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CMS Perfomance Summary | |
|---|------|---|------|
| 1. Duration of excess emissions in reporting period due to: | | CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / | 0.36 | 3. [Total CMS Downtime] x (100) / [Total source | 0.00 |
| [Total source operating time] % ³ | 0.30 | operating time] % ³ | 0.00 |
| 2 Record all times in hours. | | <u> </u> | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:
Des Gillen

Docusigned by:

Du Gillen

ONT 2004 40AD 13450...

Title:
President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

| Pol | luta | nt: | H ₂ S |
|-----|------|-----|------------------|
| | | | |

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: East Alstom Boiler (0448020007B034)

Source Operating Time in Reporting Period²:

2,209 hr (TIU fuel gas was combusted for 0 hours and natural gas was combusted for 2,209 hours for a total of 2,209

hours this quarter)

| Emission Data Summary | | CMS Perfomance Summary | |
|---|------|--|--------------|
| Duration of excess emissions in reporting period due to: | | CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 0 | c. Quality assu s | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0.00 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 |
| 2 Record all times in hours. | | | |
| | • | or greater of the total operating time or the total CMS downtime is report form and the excess emission report shall be submitted. | 5 percent of |

Describe any changes since last quarter in CMS, process, or controls.

The West Alstom Boiler combusted a combination of natural gas and TIU Mix Drum fuel gas this quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| | DocuSigned by: |
| Signature: | Des Gillen |
| | 90F20640AD13450 |
| Title: | President - BP-Husky Refining LLC |
| | 1/31/2022 |
| Date: | |

¹ Form described in 40 CFR 60.7 (d)

Pollutant: H₂S

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

| 2 Hoodia all tillio | 50 III 110 G1 0. | |
|-------------------------|----------------------------|--|
| ³ For the re | eporting period: | If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted. |
| Describe an | y changes si | ince last quarter in CMS, process, or controls. |
| The West Al | stom Boiler co | ombusted a combination of natural gas and TIU Mix Drum fuel gas this quarter. |
| I certify that | the informat | tion contained in this report is true, accurate, and complete. |
| Name: | Des Gillen DocuSigned by: | |
| Signature: | Des Gillen 90F20640AD13450 | 5 |
| Title: | President - I | BP-Husky Refining LLC |
| | 1/31/2022 | |
| Date: | | |

Company: **BP-Husky Refining LLC**

0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average **Emission Limitation:**

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: West Alstom Boiler (0448020007B035)

2,209 hr (TIU fuel gas was combusted for 2,209 hours and **Total Source Operating Time in Reporting Period²:** natural gas was combusted for 0 hours for a total of

2,209 hours this quarter)

| Emission Data Summary | CMS Perfomance Summary | | | |
|---|------------------------|--|------|--|
| Duration of excess emissions in reporting period due to: | | CMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 | |
| d. Other known causes | 0 | d. Other known causes | 0 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 | |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0.36 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 | |
| 2 Record all times in hours. | • | • | • | |

| Name: | Des Gillen |
|------------|--|
| Signature: | Des Gillen |
| | 90F20640AD13450 |
| Title: | President - BP-Husky Refining LLC |
| Title: | President - BP-Husky Refining LLC 1/31/2022 |

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates: January 1, 2022 **From:** October 1, 2021 To:

| Pollutant: | H_2S |
|------------|--------|
|------------|--------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: FCC/CO Boiler (0448020007P007)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CMS Perfomance Summary | | | | |
|--|------------------------|--|------|--|--|
| 1. Duration of excess emissions in reporting period due to: | | CMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 | | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | | |
| c. Process Problems | 8 | c. Quality assurance calibration | 0 | | |
| d. Other known causes | 0 | d. Other known causes | 0 | | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | | |
| Total duration of excess emissions | 8 | 2. Total CMS Downtime | 0 | | |
| Total duration of excess emissions x (100) / [Total source operating time] %³ | 0.36 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 | | |
| 2 Record all times in hours. | | | | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:
Des Gillen

Docusigned by:

Des Gillen

ONFERONMENTALE

Title:
President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

| | BP-HUSKY REFINING LLC - TIU MIX DRUM H2S CMS REPORT FOR 4TH QUARTER 2021 | | | | | | | | | | |
|--|--|-----------------|--|------------------------------|-------------------------------------|---|---|---|---|---|--|
| EMISSIONS UNIT ID/Description | | Semi- Annual | ACTUAL METHOD USED TO DETERMINE COMPLIANCE | | DEVIATION DURATION Date / Time End | | PROBABLE CAUSE FOR THE DEVIATION | CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN | WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No- If Yes, continue to the next column) | MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below) | MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below) |
| B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007- FCC/CO Boiler | Yes | No | Continuous Monitoring System | 10/8/2021 at 13:00 hours | 10/8/2021 at 16:00 hours | CEMS excess emissions for 180 minutes | Lean oil stripper fan in the Coker Gas plant was taken out of service for a routine PM at the same time as an increase in gas from Coker 3 coming off a spall. | Lean oil stripper fan was placed back in service. Lean oil stripper flow to the Absorber stripper was increased. Coker 3 rate was reduced. | No | 10/8/2021 | 10/8/2021 |
| B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace; B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007- FCC/CO Boiler | Yes | No | Continuous Monitoring System | 11/30/2021 at 01:00 hours | 11/30/2021 at 02:00 hours | CEMS excess emissions for 60 minutes | Elevated amine temperatures resulted in decreased treating capacity at the bulk amine contactor. | Acid gas flow was diverted from the bulk amine contactor and coker rates were reduced. | No | 11/30/2021 | 12/1/2021 |
| B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007- FCC/CO Boiler | Yes | No | Continuous Monitoring System | | 12/15/2021 at 16:00 hours | CEMS excess emissions for 120 minutes | Elevated amine temperatures resulted in decreased treating capacity at the bulk amine contactor. | Acid gas flow was diverted from the bulk amine contactor and coker rates were reduced. | No | 12/15/2021 | 12/16/2021 |
| B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace; B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007- FCC/CO Boiler | Yes | No | Continuous Monitoring System | 12/27/2021 at 12:00 hours | 12/27/2021 at 14:00 hours | CEMS excess emissions for 120 minutes | Elevated amine temperatures resulted in decreased treating capacity at the bulk amine contactor. A lean amine stripper air cooler tripped off during this time which contributed to the elevated lean amine temperatures. | Operations restarted the lean amine stripper air cooler and diverted some acid gas away from the bulk amine contactor. | No | 12/27/2021 | 12/27/2021 |

| Pol | lutant | : Total | Sulfur |
|-----|--------|---------|--------|
|-----|--------|---------|--------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation:21.02 tons SO2 per rolling 12-month periodAddress:4001 Cedar Point Road, Oregon, Ohio 43616Monitor Manufacturer and Model No.:Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: Crude Vac 2 Furnace (0448020007B019)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | |
|--|---|--|
| Duration of excess emissions in reporting period due to: | | |
| 0 | a. Monitor equipment malfunctions | 26 |
| 0 | b. Non-monitor equipment malfunctions | 45 |
| 0 | c. Quality assurance calibration | 0 |
| 0 | d. Other known causes | 3 |
| 0 | e. Unknown causes | 0 |
| 0 | 2. Total CMS Downtime | 74 |
| 0 | 3. [Total CMS Downtime] x (100) / [Total source | 3.35 |
| | operating time] % ³ | |
| | 0 0 0 0 0 | b. Non-monitor equipment malfunctions c. Quality assurance calibration d. Other known causes e. Unknown causes 2. Total CMS Downtime 3. [Total CMS Downtime] x (100) / [Total source |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:
Des Gillen

Bocusigned by:

Des Gillen

90F20640AD13450...

Title:
President - BP-Husky Refining LLC

1/31/2022

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 6.45 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: <u>Thermo Scientific SOLA II, SN: SL-09030713</u>

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: Naphtha Treater Furnace (0448020007B022)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CMS Perfomance Summary | | | |
|--|--|---|------|--|
| 1. Duration of excess emissions in reporting period due to: | CMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 26 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 45 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | |
| d. Other known causes | 0 | d. Other known causes | 3 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 74 | |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | | 3. [Total CMS Downtime] x (100) / [Total source | 3.35 | |
| | | operating time] % ³ | | |
| 2 Record all times in hours. | | | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:
Des Gillen

Docusigned by:

Des Gillen

Signature:

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

Pollutant: Total Sulfur

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

| Reporting Period Dates: | From: | October 1, 2 | <u>)21</u> | To: | <u>January 1, 2022</u> | |
|--|----------|------------------------|------------|---|---|------------|
| Company: | BP-Husk | κ <u>y Refining Ll</u> | <u>.C</u> | | | |
| Emission Limitation: | 2.32 ton | s SO2 per rol | ing 12- | month perio | <u>d</u> | |
| Address: | 4001 Ce | dar Point Ro | ad, Ore | gon, Ohio 43 | <u>3616</u> | |
| Monitor Manufacturer and Model No.: | Thermo | Scientific SO | _A II, S | N: SL-09030 | <u>713</u> | |
| Date of Latest CMS Certification or Audit: | 11/2/202 | 21 | | | | |
| Process Unit(s) Description: | DHT A-T | rain Furnace | (04480 | 020007B029 |) | |
| Total Source Operating Time in Reporting Period ² : | | 2,209 | hr | natural g | gas was combusted for 2,209 ho as was combusted for 0 hours for urs this quarter) | |
| Emission Data Summary | | | CMS P | erfomance | Summary | |
| 1. Duration of excess emissions in reporting period d | ue to: | | 1. CM | S downtime | in reporting period due to: | |
| a. Start-up/Shutdown: | | 0 | a. | Monitor equ | uipment malfunctions | 26 |
| b. Control equipment problems | | 0 | b. | Non-monito | or equipment malfunctions | 45 |
| c. Process Problems | | 0 | C. | Quality ass | urance calibration | 0 |
| d. Other known causes | | 0 | d. | Other know | n causes | 3 |
| e. Unknown causes | | 0 | e. | Unknown c | auses | 0 |
| Total duration of excess emissions | | 0 | 2. Tota | al CMS Dow | ntime | 74 |
| Total duration of excess emissions x (100) / [Total source operating time] %³ | | 0 | _ | al CMS Dow rating time] ⁽ | ntime] x (100) / [Total source | 3.35 |
| 2 Record all times in hours. | | | | | | |
| | | | | | ing time or the total CMS downtime is 5 emission report shall be submitted. | percent of |

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |

¹ Form described in 40 CFR 60.7 (d)

Pollutant: Total Sulfur

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

| Reporting Period Dates: | From: | October 1, 2 | <u>021</u> | To: | <u>January 1, 2022</u> | |
|---|--------------|----------------|------------|-----------------|---|------------|
| Company: | BP-Husk | xy Refining Ll | <u>_C</u> | | | |
| Emission Limitation: | 3.86 tons | s SO2 per rol | ling 12- | month period | <u>d</u> | |
| Address: | 4001 Ce | dar Point Ro | ad, Ore | gon, Ohio 43 | <u>616</u> | |
| Monitor Manufacturer and Model No.: | Thermo | Scientific SO | LA II, SI | N: SL-09030 | <u>713</u> | |
| Date of Latest CMS Certification or Audit: | 11/2/202 | 21 | | | | |
| Process Unit(s) Description: | BGOT F | urnace (044 | 3020007 | 7B030) | | |
| Total Source Operating Time in Reporting Period ² | : | 2,209 | hr | natural ga | gas was combusted for 2,209 ho as was combusted for 0 hours for urs this quarter) | |
| Emission Data Summary | | | CMS P | erfomance | Summary | |
| 1. Duration of excess emissions in reporting period of | lue to: | | 1. CM | S downtime i | in reporting period due to: | |
| a. Start-up/Shutdown: | | 0 | a. | Monitor equ | uipment malfunctions | 26 |
| b. Control equipment problems | | 0 | b. | Non-monito | or equipment malfunctions | 45 |
| c. Process Problems | | 0 | C. | Quality ass | urance calibration | 0 |
| d. Other known causes | | 0 | d. | Other know | n causes | 3 |
| e. Unknown causes | | 0 | e. | Unknown c | auses | 0 |
| 2. Total duration of excess emissions | | 0 | 2. Tota | al CMS Dowr | ntime | 74 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | | 0 | _ | al CMS Dow | ntime] x (100) / [Total source | 3.35 |
| ² Record all times in hours. ³ For the reporting period: If the total duration of excess experiences are also also also all times in hours. | emissions is | 1 percent or a | eater of t | he total operat | ing time or the total CMS downtime is 5 | percent of |
| . c | | | | • | emission report shall be submitted. | |

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

Docusigned by:

Des Gillen

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation:11.62 tons SO2 per rolling 12-month periodAddress:4001 Cedar Point Road, Oregon, Ohio 43616Monitor Manufacturer and Model No.:Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: <u>Vac 1 Furnace (0448020007B031)</u>

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CMS Perfomance Summary | | | |
|--|------------------------|---|------|--|
| Duration of excess emissions in reporting period due to: | | 1. CMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 26 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 45 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | |
| d. Other known causes | 0 | d. Other known causes | 3 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 74 | |
| 3. Total duration of excess emissions x (100) / | | 3. [Total CMS Downtime] x (100) / [Total source | 3.35 | |
| [Total source operating time] % ³ | 0 | operating time] % ³ | 3.33 | |
| 2 Record all times in hours. | | | - | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |
| | |

¹ Form described in 40 CFR 60.7 (d)

| Pollutant: Tot | al Sulfur |
|----------------|-----------|
|----------------|-----------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation:20.46 tons SO2 per rolling 12-month periodAddress:4001 Cedar Point Road, Oregon, Ohio 43616Monitor Manufacturer and Model No.:Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: Coker 3 Furnace (0448020007B032)

Total Source Operating Time in Reporting Period²: 2,194 hr

| Emission Data Summary | | CMS Perfomance Summary | |
|--|---|---|------|
| Duration of excess emissions in reporting period due to: | | 1. CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 26 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 45 |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 3 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 74 |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CMS Downtime] x (100) / [Total source | 3.37 |
| [Total source operating time] % ³ | | operating time] % ³ | 3.37 |
| 2 Record all times in hours. | | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

DocuSigned by:

Des Gillen

90F20640AD13450...

Title:

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

| Pollutant: Total Sulfur |
|--------------------------------|
|--------------------------------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation:3.86 tons SO2 per rolling 12-month periodAddress:4001 Cedar Point Road, Oregon, Ohio 43616Monitor Manufacturer and Model No.:Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: East BGOT Furnace (0448020007B033)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary 1. Duration of excess emissions in reporting period due to: | | CMS Perfomance Summary | | |
|--|---|---|------|--|
| | | 1. CMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | | a. Monitor equipment malfunctions | 26 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 45 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | |
| d. Other known causes | 0 | d. Other known causes | 3 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 74 | |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | | 3. [Total CMS Downtime] x (100) / [Total source | 3.35 | |
| | | operating time] % ³ | | |
| 2 Record all times in hours. | | | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

DocuSigned by:

Dus Gillen

90F20640AD13450...

Title:

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

Pollutant: Total Sulfur

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

| Reporting Period Dates: | From: | October 1, 2 | 2021 | To: | <u>January 1, 2022</u> | | | | |
|---|---|---|-----------|------------------------|---|------------------------------|--|--|--|
| Company: | BP-Husky Refining LLC | | | | | | | | |
| Emission Limitation: | 3.86 tons SO2 per rolling 12-month period | | | | | | | | |
| Address: | 4001 Ce | 4001 Cedar Point Road, Oregon, Ohio 43616 | | | | | | | |
| Monitor Manufacturer and Model No.: | Thermo | Thermo Scientific SOLA II, SN: SL-09030713 | | | | | | | |
| Date of Latest CMS Certification or Audit: | 11/2/20 | 21 | | | | | | | |
| Process Unit(s) Description: | | East Alstom Boiler (0448020007B034) and West Alstom Boiler (0448020007B035) | | | | | | | |
| Source Operating Time in Reporting Period ² : | | 2,20 | | (TIU fuel least one | gas was combusted for 2,209 ho of the Alstom Boilers for the qua combusted for 0 hours in both Al | ours in at arter. Natural | | | |
| Emission Data Summary | | | CMS | Perfomance | Summary | | | | |
| 1. Duration of excess emissions in reporting period | due to: | | 1. CN | IS downtime | in reporting period due to: | | | | |
| a. Start-up/Shutdown: | | 0 | a. | Monitor equ | uipment malfunctions | 26 | | | |
| b. Control equipment problems | | 0 | b. | Non-monito | or equipment malfunctions | 45 | | | |
| c. Process Problems | | 0 | C. | Quality ass | us | 0 | | | |
| d. Other known causes | | 0 | d. | Other know | vn causes | 3 | | | |
| e. Unknown causes | | 0 | e. | Unknown c | auses | 0 | | | |
| 2. Total duration of excess emissions | | 0 | | tal CMS Dow | | 74 | | | |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | | 0 | | erating time] | vntime] x (100) / [Total source | 3.35 | | | |
| 1 | process, | or controls. | port form | and the excess | ting time or the total CMS downtime is the emission report shall be submitted. | 5 percent of | | | |
| Signature: Des Gillen | | | _ | | | | | | |
| Title: President - BP-Husky Refining LLC | | | | | | | | | |

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - TIU MIX DRUM TS CMS REPORT FOR 4TH QUARTER 2021

| | | orting ent (choose | ACTUAL | | DEVIATI INFORMA | | | CORRECTIVE ACTIONS / | WAS DEVIATION ATTRIBUTABLE TO A | MALFUNCTION VERBAL REPORT DATE | MALFUNCTION WRITTEN REPORT DATE |
|---|--|-----------------------|------------------------------------|------------------------------------|------------------------------|---|--|--|------------------------------------|-----------------------------------|---------------------------------|
| EMISSIONS UNIT ID/Description | D/Description Quarterly Quarterly Quarterly Quarterly Quarterly Annual Deviation Deviation Deviation Duration Deviation Duration Deviation Duration Description AND Magnitude Date / Time Start Deviation Duration Description AND Magnitude OF THE Deviation Deviation AND Magnitude OF THE Deviation Taken Malfunction If Yes, conting columns and processing a | | | state (If no reports were made, st | | | | | | | |
| B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007- FCC/CO Boiler | Yes | No | Continuous Monitoring System | 10/1/2021 at 09:00 hours | 10/3/2021 at 06:00 hours | CEMS out-of-control time for 2700 minutes | Vivicom failed to complete daily validation | Recalibrated and Returned Analyzer to service once identified | No | No Reports | No Reports |
| B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007- FCC/CO Boiler | Yes | No | Continuous Monitoring System | 11/22/2021 at 09:00 hours | 11/22/2021 at 11:00 hours | CEMS downtime for 120 minutes | Sample System Maintenance | Semi-annual PM as well as sample valve replacements. | No | No Reports | No Reports |
| B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace; B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007- FCC/CO Boiler | Yes | No | Continuous Monitoring System | 11/22/2021 at 13:00 hours | 11/22/2021 at 14:00 hours | CEMS downtime for 60 minutes | Recalibrate for Drift | Calibration gas checks, recalibrated and returned to service. | No | No Reports | No Reports |
| B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007- FCC/CO Boiler | Yes | No | Continuous Monitoring System | 11/28/2021 at 11:00 hours | 11/29/2021 at 13:00 hours | CEMS downtime for 1560 minutes | Sample Heater Failure | Sample heater failed. It was repaired, recalibrated, and returned to service | No | No Reports | No Reports |

| Pollutant: | H ₂ S |
|------------|------------------|
|------------|------------------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30028039490020

Date of Latest CMS Certification or Audit: 11/15/2021

Process Unit(s) Description: <u>Iso 2 Feed Heater (0448020007B008)</u>

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CMS Perfomance Summary | | | |
|---|-------|---|------|--|--|
| 1. Duration of excess emissions in reporting period due | e to: | CMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 | | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | | |
| d. Other known causes | 0 | d. Other known causes | 0 | | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 | | |
| 3. Total duration of excess emissions x (100) / | 0.00 | 3. [Total CMS Downtime] x (100) / [Total source | 0.00 | | |
| [Total source operating time] % ³ | | operating time] % ³ | 0.00 | | |
| 2 Record all times in hours. | | | | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

DocuSigned by:

Des Gillen

90F20640AD13450...

Title:

President - BP-Husky Refining LLC

Date:

1/31/2022

¹ Form described in 40 CFR 60.7 (d)

Pollutant: H₂S

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30028039490020

Date of Latest CMS Certification or Audit: 11/15/2021

Process Unit(s) Description: <u>Iso 2 Stabilizer Reboiler (0448020007B009)</u>

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | ICMS Perfomance Summary | |
|--|-------|--|------|
| 1. Duration of excess emissions in reporting period due | e to: | CMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0.00 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 |
| 2 Record all times in hours. | | | |
| 1 | • | ent or greater of the total operating time or the total CMS downtime is nmary report form and the excess emission report shall be submitted | • |

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |
| | |

¹ Form described in 40 CFR 60.7 (d)

| Pollutant: | H ₂ S |
|------------|------------------|
|------------|------------------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30028039490020

Date of Latest CMS Certification or Audit: 11/15/2021

Process Unit(s) Description: <u>Iso 2 Splitter Reboiler (0448020007B010)</u>

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CMS Perfomance Summary | | | |
|--|------------------------|---|------|--|
| 1. Duration of excess emissions in reporting period due | e to: | CMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | |
| d. Other known causes | 0 | d. Other known causes | 0 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 | |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0.00 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.00 | |
| 2 Record all times in hours. | | | | |
| | • | ent or greater of the total operating time or the total CMS downtime inmary report form and the excess emission report shall be submitted | | |

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:
Des Gillen

Docusigned by:

Des Gillen

90F20640AD13450...

Title:
President - BP-Husky Refining LLC

1/31/2022

¹ Form described in 40 CFR 60.7 (d)

| | | BP-I | HUSKY RE | FINING | LLC - EA | ST SIDE N | IIX DRUM H2S C | MS REPORT FO | R 4TH QUARTER | 2021 | |
|--|------------------------------|------|------------------------------------|--------|--|-----------|-------------------------------------|--|------------------------------|---|--|
| EMISSIONS UNIT ID/Description | Report Requirement Quarterly | | METHOD USED TO DETERMINE | | DEVIATION INFORMATION I DURATION Date / Time End | | PROBABLE CAUSE FOR THE DEVIATION | CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN | | MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below) | MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below) |
| B008 - Iso 2 Feed Heater B009 - Iso 2 Stabilizer Reboiler B010 - Iso 2 Splitter Reboiler | Yes | No | Continuous Monitoring System | | | | No dow | ntime or excess emissions du | ring this reporting quarter. | | |

| Pollutant: H ₂ S | | | | | | |
|---|----------------------|------------------|-------------|-----------------------------|--|------|
| Reporting Period Dates: | From: | October 1, 20 | <u> 21</u> | To: | January 1, 2022 | |
| Company: | BP-Husl | ky Refining LL | <u>C</u> | | | |
| Emission Limitation: | <u>162 ppm</u> | nv H₂S in fuel o | gas on a | a 3-hr rolling | g average | |
| Address: | 4001 Ce | edar Point Roa | d, Oreg | on, Ohio 43 | 3616 | |
| Monitor Manufacturer and Model | | s Maxum II, SN | _ | | | |
| Date of Latest CMS Certification of | · | | | | _ | |
| Process Unit(s) Description: | Reforme | er 3 Furnace(| 044802 | 0007B036) | | |
| Total Source Operating Time in Reporting Period ² : | | | hr | (Reformer | 3 fuel gas was combusted for 2,209 hou ombusted for 0 hours for a total of 2,209 | |
| Emission Data Summary | | | CMS P | erfomance | Summary | |
| 1. Duration of excess emissions in | reporting period due | e to: | 1. CM | IS downtime | e in reporting period due to: | |
| a. Start-up/Shutdown: | | 0 | a. | Monitor eq | uipment malfunctions | 0 |
| b. Control equipment problems | | 0 | b. | Non-monite | or equipment malfunctions | 0 |
| c. Process Problems | | 0 | C. | Quality ass | surance calibration | 0 |
| d. Other known causes | | 0 | d. | Other know | vn causes | 0 |
| e. Unknown causes | | 0 | e. | Unknown d | causes | 0 |
| 2. Total duration of excess emissio | ns | 0 | 2. To | tal CMS Do | wntime | 0 |
| Total duration of excess emissio [Total source operating time] %³ | ns x (100) / | 0.00 | _ | otal CMS Do erating time | owntime] x (100) / [Total source] % ³ | 0.00 |
| i or the reporting period: | | • | Ū | | tal operating time or the total CMS downt | |
| submitted | • | eraung ume, bou | i iile Suii | imary report i | orm and the excess emission report shal | be |
| Describe any changes since last of the Reformer 3 Furnace combusted | d a combination of F | Reformer 3 fue | l gas ar | _ | • | |
| I certify that the information conta | amea in this report | ı is true, accu | rate, ai | ia compiet | le. | |
| Name: Des Gillen | | | | | | |
| Signature: Des Gillen | | | | | | |
| 90F20640AD13450 | | | | | | |

1/31/2022

Title:

Date:

President - BP-Husky Refining LLC

¹ Form described in 40 CFR 60.7 (d)

| Pol | lutar | ıt: | H ₂ S |
|-----|-------|-----|------------------|
|-----|-------|-----|------------------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 60 ppmv H₂S in fuel gas on a 365-day rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30029994471080

Date of Latest CMS Certification or Audit: 11/15/2021

Process Unit(s) Description: Reformer 3 Furnace (0448020007B036)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CMS Perfomance Summary | | |
|--|--|--|-----|
| 1. Duration of excess emissions in reporting period due | CMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0.00 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.0 |
| ² Record all times in minutes. | | cont or greater of the total energting time or the total CMS downti | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be

submitted.

Describe any changes since last quarter in CMS, process, or controls.

The Reformer 3 Furnace combusted a combination of Reformer 3 fuel gas and natural gas this quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Cillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | |

¹ Form described in 40 CFR 60.7 (d)

| | | | | BP. | -HUSKY R | EFINING LLC | - REFORMER 3 FURNACE H | 12S CMS REPORT FOR | 4TH | | |
|----------------------------------|-----|-------|--|--|--|--|----------------------------------|---|--|---|---|
| | | Semi- | ACTUAL METHOD USED TO DETERMINE COMPLIANCE | DEVIATION Date / Time Start | DEVIATION INFORMATION DURATION Date / Time End | DESCRIPTION AND MAGNITUDE OF THE DEVIATION | PROBABLE CAUSE FOR THE DEVIATION | CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN | WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column) | MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below) | • |
| B036 - Reformer 3 Furnace | Yes | No | Continuous Monitoring System | No downtime or excess emissions during this reporting quarter. | | | | | | | |

| Pol | lutant: | H_2S |
|-----|---------|--------|
|-----|---------|--------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: **BP-Husky Refining LLC**

162 ppmv H₂S in fuel gas on a 3-hr rolling average **Emission Limitation:**

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30050531960100

Date of Latest CMS Certification or Audit: 11/16/2021

East Flare (0448020007P003) **Process Unit(s) Description:**

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CMS Perfomance Summary | | | |
|--|------------------------|---|------|--|
| 1. Duration of excess emissions in reporting period du | e to: | CMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 1 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 3 | |
| d. Other known causes | 0 | d. Other known causes | 0 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 4 | |
| Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0.00 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.18 | |
| Record all times in minutes. For the reporting period: If the total duration of excess em | | ercent or greater of the total operating time or the total CMS down oth the summary report form and the excess emission report shal | | |

submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| ritie. | 1/31/2022 |
| Date: | |

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST FLARE H2S CMS REPORT FOR 4TH QUARTER 2021 DEVIATION Reporting Requiremen WAS DEVIATION MALFUNCTION VERBAL MALFUNCTION WRITTEN (choose one or both) INFORMATION ACTUAL METHOD CORRECTIVE ACTIONS / ATTRIBUTABLE TO A REPORT DATE REPORT DATE **EMISSIONS UNIT** PROBABLE CAUSE FOR THE DEVIATION DURATION USED TO DETERMINE DESCRIPTION AND PREVENTATIVE MEASURES MALFUNCTION? (Yes or No -(If no reports were made, state (If no reports were made, state DEVIATION ID/Description MAGNITUDE If Yes, continue to the next COMPLIANCE TAKEN "NO REPORTS" in the space "NO REPORTS" in the space Quarterly Annual Date / Time Date / Time OF THE DEVIATION column) below) below) Start End Replaced the sample pump, 10/5/2021 at 10/5/2021 at CEMS downtime for **Continuous Monitoring** P003 - East Flare recalibrated, and returned to Yes No Sample line maintenance No Reports No Reports No System 13:00 hours 14:00 hours 60 minutes service Continuous Monitoring 11/16/2021 at 11/16/2021 at CEMS downtime for Recalibrated and Returned P003 - East Flare Yes No CGA Test Completed No No Reports No Reports 09:00 hours 12:00 hours 180 minutes System Analyzer to service.

Pollutant: Total Sulfur

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: NA - Analyzer used to calculate SO₂ emissions

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-10430115

Date of Latest CMS Certification or Audit: TS Low: 10/27/2021; TS High: 10/28/2021

Process Unit(s) Description: East Flare (0448020007P003)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CEMS Perfomance Summary | | |
|---|---|--|------|
| 1. Duration of excess emissions in reporting period due | CEMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | NA | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | NA | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | NA | c. Quality assurance calibration | 2 |
| d. Other known causes | NA | d. Other known causes | 0 |
| e. Unknown causes | NA | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | NA | 2. Total CEMS Downtime | 2 |
| 3. Total duration of excess emissions x (100) / | | 3. [Total CEMS Downtime] x (100) / [Total source | 0.09 |
| [Total source operating time] %3 | NA | operating time] % ³ | 0.09 |

² Record all times in minutes.

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST FLARE TS CMS REPORT FOR 4TH QUARTER 2021 Reporting MALFUNCTION VERBAL MALFUNCTION WRITTEN WAS DEVIATION ACTUAL INFORMATION Requirement (choose EMISSIONS CORRECTIVE ACTIONS / ATTRIBUTABLE TO A REPORT DATE REPORT DATE METHOD USED PROBABLE CAUSE FOR THE DEVIATION DURATION **DESCRIPTION AND** PREVENTATIVE MEASURES MALFUNCTION? (Yes or No - (If no reports were made, state (If no reports were made, state UNIT TO DETERMINE DEVIATION MAGNITUDE OF THE DEVIATION "NO REPORTS" in the space ID/Description Quarterly TAKEN If Yes, continue to the next "NO REPORTS" in the space Annual COMPLIANCE Date / Time Date / Time Fnd Continuous 10/27/2021 at 10/27/2021 at CEMS downtime for Recalibrated and Returned P003 - East Flare Yes No Monitoring CGA Test Completed No No Reports No Reports 14:00 hours Analyzer to service. 13:00 hours 60 minutes System Continuous 10/28/2021 at 10/28/2021 at CEMS downtime for Recalibrated and Returned Monitoring P003 - East Flare Yes No CGA Test Completed No No Reports No Reports 10:00 hours 11:00 hours 60 minutes Analyzer to service. System

| Pol | lutant: | H ₂ S |
|-----|---------|------------------|
| | | |

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30050531960400

Date of Latest CMS Certification or Audit: 11/17/2021

Process Unit(s) Description: West Flare Vent Gas (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CMS Perfomance Summary | | |
|--|--|---|------|
| 1. Duration of excess emissions in reporting period du | CMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 32 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 0 | c. Quality assurance calibration | 2 |
| d. Other known causes | 0 | d. Other known causes | 6 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 40 |
| 3. Total duration of excess emissions x (100) / | 0.00 | 3. [Total CMS Downtime] x (100) / [Total source | 1.81 |
| [Total source operating time] % ³ | | operating time] % ³ | 1.01 |
| ² Record all times in minutes. | | | |

For the reporting period:

If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |
| | |

¹ Form described in 40 CFR 60.7 (d)

| Pollutant: | H₂S |
|------------|-----|
|------------|-----|

Emission Data Summary

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: West Flare C Valve (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Ellission data Sullillary | | CIVIS PERIORIALICE SUITINIALV | | |
|---|---|--|------|--|
| 1. Duration of excess emissions in reporting period due | 1. CMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | NA a. Monitor equipment malfunctions | | | |
| b. Control equipment problems | NA | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems NA | | c. Quality assurance calibration | 0 | |
| d. Other known causes NA | | d. Other known causes | 0 | |
| e. Unknown causes NA | | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 2. Total CMS Downtime | 0 | | |
| 3. Total duration of excess emissions x (100) / | 3. Total duration of excess emissions x (100) / NA ⁴ | | 0.00 | |
| [Total source operating time] % ³ | operating time] % ³ | 0.00 | | |
| ² Record all times in minutes. | | | | |
| | | ent or greater of the total operating time or the total CMS downting the summary report form and the excess emission report shall be a summary repor | | |

⁴ Excess emissions are reported in the West Flare Vent Gas section, and are not included in this section to avoid double counting.

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Gillen |
| | 90F20640AD13450 |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |
| | |

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST FLARE H2S CMS REPORT FOR 4TH QUARTER 2021

| | | Requirement | | | DEVIATION INFORMATION INFORMAT | | | | WAS DEVIATION | MALFUNCTION VERBAL | MALFUNCTION WRITTEN | | |
|-------------------------------|-----------|-------------|------------------------------------|------------------------------|--|--|----------------------------------|--|--------------------------------------|------------------------------------|---|---|---|
| EMISSIONS UNIT ID/Description | | Semi- | ACTUAL METHOD USED TO DETERMINE | | | DESCRIPTION AND | | DEVIATION DURATION DESCRIPTION AND PROBABLE CAUSE FOR THE PRE | | YIATION PREVENTATIVE MEASURES MA | ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - | REPORT DATE (If no reports were made, state | REPORT DATE (If no reports were made, state |
| 15,2550np11011 | Quarterly | Annual | COMPLIANCE | Date / Time Start | Date / Time End | MAGNITUDE OF THE DEVIATION | | TAKEN | If Yes, continue to the next column) | "NO REPORTS" in the space below) | "NO REPORTS" in the space below) | | |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 10/4/2021 at 09:00 hours | 10/4/2021 at 10:00 hours | CEMS downtime for 60 minutes | Sample line maintenance | Checked flow and gate times for cal gas and returned to service | No | No Reports | No Reports | | |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 11/9/2021 at 06:00 hours | 11/10/2021 at 10:00 hours | CEMS out-of-control time for 1680 minutes | Analyzer Failed Daily Validation | Started troubleshooting sample flow, recalibrated for drift, and returned to service | No | No Reports | No Reports | | |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 11/10/2021 at 11:00 hours | 11/10/2021 at 14:00 hours | CEMS downtime for 180 minutes | Repairs to sample valve | Techs found plugged tubing coming off the model 50 valve. Replaced model 50 sample valve. | No | No Reports | No Reports | | |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 11/11/2021 at 07:00 hours | 11/11/2021 at 10:00 hours | CEMS downtime for 180 minutes | Sample System Maintenance | Checked sample system and analyzer prior to validation | No | No Reports | No Reports | | |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 11/16/2021 at 13:00 hours | 11/16/2021 at 14:00 hours | CEMS downtime for 60 minutes | Maintenance Checks | Calibration gas checks | No | No Reports | No Reports | | |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 11/17/2021 at 09:00 hours | 11/17/2021 at 11:00 hours | CEMS downtime for 120 minutes | Maintenance Checks | Calibration gas checks and single line calibrations | No | No Reports | No Reports | | |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 11/17/2021 at 13:00 hours | 11/17/2021 at 15:00 hours | CEMS downtime for 120 minutes | CGA Test Completed | Recalibrated and Returned Analyzer to service. | No | No Reports | No Reports | | |

Pollutant: Total Sulfur

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation:

Address:

4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.:

Thermo Scientific SOLA II, SN: SL-10440115

Date of Latest CMS Certification or Audit:

TS Low: 10/26/2021; TS High: 10/26/2021

West Flare Vent Gas (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CEMS Perfomance Summary | | |
|--|-----|--|------|--|
| Duration of excess emissions in reporting period due to: | | CEMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | NA | a. Monitor equipment malfunctions | 0 | |
| b. Control equipment problems | NA | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | NA | c. Quality assurance calibration | 1 | |
| d. Other known causes | NA | d. Other known causes | 6 | |
| e. Unknown causes | NA | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | NA | 2. Total CEMS Downtime | 7 | |
| 3. Total duration of excess emissions x (100) / | NA | 3. [Total CEMS Downtime] x (100) / [Total source | 0.32 | |
| [Total source operating time] % ³ | INA | operating time] % ³ | 0.52 | |

² Record all times in minutes.

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

DocuSigned by:

Du Gillen

90F20640AD13450...

Title: President - BP-Husky Refining LLC

1/31/2022

Date:

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

¹ Form described in 40 CFR 60.7 (d)

Pollutant: Total Sulfur

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: NA - Analyzer used to calculate SO2 emissions

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: West Flare C Valve (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CEMS Perfomance Summary | | |
|---|-------------------------|--|------|
| 1. Duration of excess emissions in reporting period due | e to: | CEMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | NA | a. Monitor equipment malfunctions | 26 |
| b. Control equipment problems | NA | b. Non-monitor equipment malfunctions | 45 |
| c. Process Problems | NA | c. Quality assurance calibration | 0 |
| d. Other known causes | NA | d. Other known causes | 3 |
| e. Unknown causes | NA | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | NA | 2. Total CEMS Downtime | 74 |
| 3. Total duration of excess emissions x (100) / | NA | 3. [Total CEMS Downtime] x (100) / [Total source | 3.35 |
| [Total source operating time] % ³ | | operating time] % ³ | ა.აა |

² Record all times in minutes

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Docusigned by:
Des Gillen

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST FLARE TS CMS REPORT FOR 4TH QUARTER 2021

| EMISSIONS UNIT ID/Description | Requireme Quarterly | orting ent (choose Semi- Annual | ACTUAL METHOD USED TO DETERMINE COMPLIANCE | DEVIATION Date / Time | Date / Time | DESCRIPTION AND MAGNITUDE OF THE DEVIATION | PROBABLE CAUSE FOR THE DEVIATION | CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN | WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No- If Yes, continue to the next column) | MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below) | MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below) |
|-------------------------------|------------------------|--|---|---------------------------------------|------------------------------|--|----------------------------------|--|---|---|--|
| P004 - West Flare | Yes | No | Continuous Monitoring System | Start 10/26/2021 at 13:00 hours | 10/26/2021 at 14:00 hours | CEMS downtime for 60 minutes | CGA Test Completed | Recalibrated and Returned Analyzer to service. | No | No Reports | No Reports |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 11/9/2021 at 09:00 hours | 11/9/2021 at 10:00 hours | CEMS downtime for 60 minutes | Recalibrate for Drift | Recalibrated for drift and returned to service | No | No Reports | No Reports |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 11/12/2021 at 09:00 hours | 11/12/2021 at 10:00 hours | CEMS downtime for 60 minutes | Recalibrate for Drift | Recalibrated for drift and returned to service | No | No Reports | No Reports |
| P004 - West Flare | Yes | No | Continuous Monitoring System | 12/1/2021 at 10:00 hours | 12/1/2021 at 14:00 hours | CEMS downtime for 240 minutes | Semi-annual PM | Sample valve and leak check PM. | No | No Reports | No Reports |

| Pol | lutant: | NOx |
|-----|---------|-----|
|-----|---------|-----|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 40 ppm_{vd} (30-day rolling average)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 02

Date of Latest CEMS Certification or Audit: 11/19/2021

Process Unit(s) Description: Reformer 3 Furnace (0448020007B036)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | CEMS Perfomance Summary | | | |
|--|---|--|------|--|
| 1. Duration of excess emissions in reporting period du | CEMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown | 0 | a. Monitor equipment malfunctions | 0 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | |
| d. Other known causes | 0 | d. Other known causes | 1 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 1 | |
| 3. Total duration of excess emissions x (100) / | 0.00 | 3. [Total CEMS Downtime] x (100) / [Total source | 0.05 | |
| [Total source operating time] % ³ | | operating time] % ³ | | |
| ² Record all times in minutes. | | | | |
| i or the reporting period. | | ercent or greater of the total operating time or the total CEMS do both the summary report form and the excess emission report sh | | |

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |

¹ Form described in 40 CFR 60.7 (d)

| | | | | BP-HUSKY | REFINING | LLC - REFOR | MER 3 FURNACE NOx CEMS | REPORT FOR 4TH QU | IARTER 2021 | | |
|----------------------------------|---------------------------|-----------------|---|-------------------------------|------------------------------|--|----------------------------------|--|---|--|------------------------------------|
| | Reporting R (choose or | | ACTUAL METHOD USED | | DEVIATION INFORMATION | 1 | | CORRECTIVE ACTIONS / | WAS DEVIATION ATTRIBUTABLE TO A | MALFUNCTION VERBAL REPORT DATE | MALFUNCTION WRITTEN REPORT DATE |
| UNIT ID/Description | Quarterly | Semi- Annual | TO DETERMINE COMPLIANCE | DEVIATION Date / Time Start | DURATION Date / Time End | DESCRIPTION AND MAGNITUDE OF THE DEVIATION | PROBABLE CAUSE FOR THE DEVIATION | PREVENTATIVE MEASURES TAKEN | MALFUNCTION? (Yes or No- If Yes, continue to the next column) | (If no reports were made, state "NO REPORTS" in the space below) | |
| B036 - Reformer 3 Furnace | Yes | No | Continuous Emission Monitoring System (CEMS) | 12/16/2021 at 13:00 hours | 12/16/2021 at 14:00 hours | CEMS downtime for 60 minutes | Recalibrate for Drift | Recalibrated and Returned Analyzer to service. | No | No Reports | No Reports |

| Pol | lutant: | CO |
|-----|----------|----|
| ΓUI | iulaiil. | cc |

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 500 ppmv CO, db, 1-hr average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB URAS 14, SN: 3.240684.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

| Emission Data Summary | CMS Perfomance Summary | | | |
|---|--|---|------|--|
| 1. Duration of excess emissions in reporting period due | CMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | |
| d. Other known causes | 0 | d. Other known causes | 0 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 | |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CMS Downtime] x (100) / [Total source | 0.00 | |
| [Total source operating time] % ³ | | operating time] % ³ | | |
| 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit ar | nd the CO Boiler by | pass stack was in service. | | |
| ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted. | | | | |

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | DocuSigned by: Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | L/31/2022 |

¹ Form described in 40 CFR 60.7 (d)

| | BP-HUSKY REFINING LLC - FCC REGEN VENT CO CEMS REPORT 4TH QUARTER 2021 | | | | | | | | | | |
|--|--|----------------------------------|--|---|---------------------------|---------------------------------|----------------------------------|---------------------------|--|--------------------------------------|---------------------------------------|
| EMISSIONS | Requireme | orting ent (choose r both) | ACTUAL | | DEVIATION INFORMATION | | | CORRECTIVE | WAS DEVIATION ATTRIBUTABLE TO A | MALFUNCTION VERBAL REPORT DATE | MALFUNCTION WRITTEN REPORT DATE |
| UNIT ID/Description | UNIT METHOD USED | | METHOD USED TO DETERMINE | DEVIATION | TION DURATION DESCRIPTION | | PROBABLE CAUSE FOR THE DEVIATION | ACTIONS / PREVENTATIVE | MALFUNCTION? (Yes or No - If Yes, continue | (If no reports were made, state "No | (If no reports were made, state "No |
| ID/Description | Quarterly | Semi- Annual | COMPLIANCE | Date / Time Start | Date / Time End | AND MAGNITUDE ate / Time OF THE | | MEASURES TAKEN | to the next column) | , | Reports" in the space below) |
| P007 - FCCU / CO Boiler Bypass Stack | Yes | No | Continuous Emissions Monitoring System (CEMS) | Bypass Stack not in operation during the quarter, therefore no excess emissions or part 60 CEMS downtime to report. | | | | | | | |

Reporting Period Dates:

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

To:

January 1, 2022

From: October 1, 2021

Company: BP-Husky Refining LLC

Emission Limitation: 58.1 ppmv NOx db @ 0% O2 (365-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240682.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

| Emission Data Summary | CMS Perfomance Summary | | | |
|---|--|---|------|--|
| 1. Duration of excess emissions in reporting period due | CMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | |
| d. Other known causes | 0 | d. Other known causes | 0 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 | |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CMS Downtime] x (100) / [Total source | 0.00 | |
| [Total source operating time] % ³ | | operating time] % ³ | | |
| 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit ar | nd the CO Boiler by | pass stack was in service. | | |
| ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted. | | | | |

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

| Po | llu | tar | ıt: | N | Ox |
|----|-----|-----|-----|---|----|
|----|-----|-----|-----|---|----|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 93.4 ppmv NOx db @ 0% O2 (7-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240682.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

| Emission Data Summary | CMS Perfomance Summary | | | |
|--|--|---|------|--|
| 1. Duration of excess emissions in reporting period due | CMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | |
| d. Other known causes | 0 | d. Other known causes | 0 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 | |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CMS Downtime] x (100) / [Total source | 0.00 | |
| [Total source operating time] % ³ | | operating time] % ³ | | |
| 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. | | | | |
| ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be | | | | |

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | DocuSigned by: Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |

submitted.

¹ Form described in 40 CFR 60.7 (d)

| | BP-HUSKY REFINING LLC - FCC REGEN VENT NOx CEMS REPORT 4TH QUARTER 2021 | | | | | | | | | | |
|--|---|----------------------|--|---|--------------------|------------------------------|-------------------------------------|---|-----------------------------------|---------------------------------|--|
| | Reporting Requirement (choose one or both) ACTI | | ACTUAL | DEVIATION INFORMATION | | | CORRECTIVE | WAS DEVIATION ATTRIBUTABLE TO A | MALFUNCTION VERBAL REPORT DATE | MALFUNCTION WRITTEN REPORT DATE | |
| EMISSIONS UNIT ID/Description | Quarterly | erly Semi- Annual | COMPLIANCE | DEVIATION | DURATION | DESCRIPTION AND MAGNITUDE | PROBABLE CAUSE FOR THE DEVIATION | ACTIONS / PREVENTATIVE MEASURES TAKEN | | | (If no reports were made, state "No Reports" in the space below) |
| | | | | Date / Time Start | Date / Time End | OF THE DEVIATION | | | | | |
| P007 - FCCU / CO Boiler Bypass Stack | Yes | No | Continuous Emissions Monitoring System (CEMS) | Bypass Stack not in operation during the quarter, therefore no excess emissions or part 60 CEMS downtime to report. | | | | | | | |

Reporting Period Dates:

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

From: October 1, 2021

January 1, 2022

To:

| Pollutant: SO ₂ |
|----------------------------|
|----------------------------|

Company: BP-Husky Refining LLC

Emission Limitation: 260 ppmvd SO2 at 0% excess O2 as a rolling 7-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240685.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

| Emission Data Summary | CMS Perfomance Summary | | | | | |
|---|------------------------|--|------|--|--|--|
| 1. Duration of excess emissions in reporting period due | to: | CMS downtime in reporting period due to: | | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 | | | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | | | |
| c. Process Problems | 0 | c. Quality assurance calibration | 0 | | | |
| d. Other known causes | 0 | d. Other known causes | 0 | | | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | | | |
| 2. Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 0 | | | |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CEMS Downtime] x (100) / [Total source | 0.00 | | | |
| [Total source operating time] % ³ | | operating time] % ³ | | | | |
| 2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service. | | | | | | |
| ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted. | | | | | | |

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | DocuSigned by: Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |
| | |

¹ Form described in 40 CFR 60.7 (d)

Pollutant: SO₂

Company:

Reporting Period Dates:

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

To:

January 1, 2022

From: October 1, 2021

BP-Husky Refining LLC

| Emission Limitation: | 160 ppmvd SO2 at 0% excess O2 as a rolling 365-day average | | | | | | | |
|--|--|--|---|------|--|--|--|--|
| Address: | 4001 Ce | 4001 Cedar Point Road, Oregon, Ohio 43616 | | | | | | |
| Monitor Manufacturer and Model No.: | ABB LIM | ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240685.3 | | | | | | |
| Date of Latest CEMS Certification or Audit: | 11/10/20 |)21 | | | | | | |
| Process Unit(s) Description: | FCCU/C | O Boiler By | pass, 0448020007P007 | | | | | |
| Total Source Operating Time in Reporting Po | eriod ² : | 0 | hr_ | | | | | |
| Emission Data Summary | | | CMS Perfomance Summary | | | | | |
| 1. Duration of excess emissions in reporting pe | eriod due | to: | CMS downtime in reporting period due to: | | | | | |
| a. Start-up/Shutdown: | | 0 | a. Monitor equipment malfunctions | 0 | | | | |
| b. Control equipment problems | | 0 | b. Non-monitor equipment malfunctions | 0 | | | | |
| c. Process Problems | | 0 | c. Quality assurance calibration | 0 | | | | |
| d. Other known causes | | 0 | d. Other known causes | 0 | | | | |
| e. Unknown causes | | 0 | e. Unknown causes | 0 | | | | |
| 2. Total duration of excess emissions | | 0 | 2. Total CMS Downtime | 0 | | | | |
| 3. Total duration of excess emissions x (100) / | | 0 | 3. [Total CMS Downtime] x (100) / [Total source | 0.00 | | | | |
| [Total source operating time] % ³ 2 Record all times in hours. hours of operation are defined as when FCCU feed | was in the unit ar | nd the CO Boiler b | operating time] % ³ | | | | | |
| ³ For the reporting period: If the total duration of ex | xcess emiss | sions is 1 pe | recent or greater of the total operating time or the total CMS dowr oth the summary report form and the excess emission report sha | | | | | |
| Describe any changes since last quarter in O | CEMS, pro | ocess, or | controls. | | | | | |
| I certify that the information contained in this | s report i | s true, ac | curate, and complete. | | | | | |
| Name: Des Gillen DocuSigned by: | | | - | | | | | |
| Signature: Des Gillen | | | - | | | | | |
| Title: President - BP-Husky Refining LL 1/31/2022 | _C | | - | | | | | |

Date:

¹ Form described in 40 CFR 60.7 (d)

| Pollutant: SO ₂ | | | | | | |
|--|--------------------|---------------------|---------------|-----------------------------|---------------------------------|------|
| Reporting Period Dates: | From: | October 1 | , 20 | <u>21</u> To : | January 1, 2022 | |
| Company: | BP-Husl | ky Refining | LL(| <u>2</u> | | |
| Emission Limitation: | 1,020 to | ns SO2 pe | r ro | ling 12-month p | <u>eriod</u> | |
| Address: | 4001 Ce | edar Point F | Roa | d, Oregon, Ohio | 43616 | |
| Monitor Manufacturer and Model No.: | ABB LIM | MAS 11UV | and | ABB MAGNOS | O2, SN: 3.240685.3 | |
| Date of Latest CEMS Certification or Audit: | 11/10/20 | 021 | | | | |
| Process Unit(s) Description: | FCCU/C | O Boiler Byr | ass | , 0448020007P00 |)7 | |
| Total Source Operating Time in Reporting Po | _ | 0 0 | <u> </u> | hr | <u></u> | |
| Total Source Operating Time in Reporting Po | eriou . | | | | | |
| Emission Data Summary | | | CN | IS Perfomance | Summary | |
| 1. Duration of excess emissions in reporting pe | to: | 1. | CMS downtime | in reporting period due to: | | |
| a. Start-up/Shutdown: | | 0 | | a. Monitor equ | uipment malfunctions | 0 |
| b. Control equipment problems | 0 | | b. Non-monito | or equipment malfunctions | 0 | |
| c. Process Problems | | 0 | | c. Quality ass | urance calibration | 0 |
| d. Other known causes | | 0 | | d. Other know | n causes | 0 |
| e. Unknown causes | | 0 | | e. Unknown c | auses | 0 |
| 2. Total duration of excess emissions | | 0 | 2. | Total CMS Dov | vntime | 0 |
| 3. Total duration of excess emissions x (100) / | | 0 | 3. | - | wntime] x (100) / [Total source | 0.00 |
| [Total source operating time] % ³ 2 Record all times in hours. hours of operation are defined as when FCCU feed | was in the unit or | nd the CO Beiler by | 2000 0 | operating time] | % ³ | |
| ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted. | | | | | | |
| Describe any changes since last quarter in C Not Applicable - No changes since the previous quarter. I certify that the information contained in this | | · | | | ete. | |

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | DocuSigned by: Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |

¹ Form described in 40 CFR 60.7 (d)

Pollutant: SO₂

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

| Reporting Period Dates: | From: | October 1 | , 202 | <u>1</u> To: | <u>January 1, 2022</u> | | | | |
|--|----------------------|-------------------------------------|--------------|-----------------------|---|------|--|--|--|
| Company: | BP-Husk | BP-Husky Refining LLC | | | | | | | |
| Emission Limitation: | 0.92 lb S | 92 lb SO2 per 1000 lb of fresh feed | | | | | | | |
| Address: | 4001 Ce | dar Point F | Road | , Oregon, Ohio | <u>43616</u> | | | | |
| Monitor Manufacturer and Model No.: | ABB LIM | MAS 11UV | and <i>i</i> | ABB MAGNOS | O2, SN: 3.240685.3 | | | | |
| Date of Latest CEMS Certification or Audit: | 11/10/20 |)21 | | | | | | | |
| Process Unit(s) Description: | FCCU/CC | O Boiler Byp | ass, | 0448020007P00 | <u>7</u> | | | | |
| Total Source Operating Time in Reporting Po | eriod ² : | 0 | | <u>hr</u> | | | | | |
| Emission Data Summary | | | CMS | S Perfomance | Summary | | | | |
| 1. Duration of excess emissions in reporting pe | eriod due | to: | 1. | CMS downtime | in reporting period due to: | | | | |
| a. Start-up/Shutdown: | | 0 | | a. Monitor equ | ipment malfunctions | 0 | | | |
| b. Control equipment problems | | 0 | | b. Non-monito | r equipment malfunctions | 0 | | | |
| c. Process Problems | | 0 | | c. Quality assu | urance calibration | 0 | | | |
| d. Other known causes | | 0 | | d. Other known causes | | | | | |
| e. Unknown causes | | 0 | , | e. Unknown causes | | | | | |
| Total duration of excess emissions | | 0 | | Total CMS Dow | | 0 | | | |
| 3. Total duration of excess emissions x (100) / | | 0 | | - | wntime] x (100) / [Total source | 0.00 | | | |
| [Total source operating time] % ³ 2 Record all times in hours, hours of operation are defined as when FCCU feed | was in the unit ar | nd the CO Boiler by | pass stad | operating time] | %3 | | | | |
| | | | | | al operating time or the total CMS down orm and the excess emission report sha | | | | |
| Describe any changes since last quarter in One Applicable - No changes since the previous quarter. | CEMS, pro | ocess, or (| cont | rols. | | | | | |
| I certify that the information contained in this | s report i | s true, acc | urat | e, and comple | te. | | | | |
| Name: Des Gillen | | | | | | | | | |
| Signature: Des Gillen 901-20840AD13450 | | | - | | | | | | |
| Title: President - BP-Husky Refining LL | .C | | | | | | | | |

Date:

1/31/2022

¹ Form described in 40 CFR 60.7 (d)

| | BP-HUSKY REFINING LLC - FCC REGEN VENT SO2 CEMS REPORT 4TH QUARTER 2021 | | | | | | | | | | |
|--|---|---------------------|--|---|--------------------|------------------------------|-------------------------------------|---|--|--|---|
| | Reporting Requirement (choose one or both) ACTUAL | | DEVIATION INFORMATION | | | CORRECTIVE | WAS DEVIATION ATTRIBUTABLE TO A | MALFUNCTION VERBAL REPORT DATE | MALFUNCTION WRITTEN REPORT DATE | | |
| EMISSIONS UNIT ID/Description | Quarterly | rly Semi- Annual | COMPLIANCE | DEVIATION | DURATION | DESCRIPTION AND MAGNITUDE | PROBABLE CAUSE FOR THE DEVIATION | ACTIONS / PREVENTATIVE MEASURES TAKEN | MALFUNCTION? (Yes or No - If Yes, continue to the next column) | | - |
| | | | | Date / Time Start | Date / Time End | OF THE DEVIATION | | | | | |
| P007 - FCCU / CO Boiler Bypass Stack | Yes | No | Continuous Emissions Monitoring System (CEMS) | Bypass Stack not in operation during the quarter, therefore no excess emissions or part 60 CEMS downtime to report. | | | | | | | |

| Pol | lutant: | CO |
|-----|---------|----|
| | | |

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 500 ppmv CO, db, 1-hr average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB URAS 26, SN: 3.347698.3

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CEMS Perfomance Summary | | | |
|--|--------|---|------|--|--|
| 1. Duration of excess emissions in reporting period de | ue to: | CEMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 7 | | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | | |
| c. Process Problems | 0 | c. Quality assurance calibration | 2 | | |
| d. Other known causes | 0 | d. Other known causes | 0 | | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | | |
| 2. Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 9 | | |
| 3. Total duration of excess emissions x (100) / [Total source operating time] % ³ | 0 | 3. Total CEMS Downtime] x (100) / [Total source operating time] % ³ | 0.41 | | |
| i or the reporting period. | • | rcent or greater of the total operating time or the total CMS downtime summary report form and the excess emission report shall be submitted. | • | | |

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |
| | |

¹ Form described in 40 CFR 60.7 (d)

| | BP-HUSKY REFINING LLC - FCC/CO BOILER CO CEMS REPORT 4TH QUARTER 2021 | | | | | | | | | | |
|--|---|-----------------------|--|------------------------------|------------------------------|-------------------------------|----------------------------------|---|----------------------------------|--|---------------------|
| | | orting ent (choose | ACTUAL | | DEVIATIO INFORMAT | | | CORRECTIVE | WAS DEVIATION | MALFUNCTION VERBAL | MALFUNCTION WRITTEN |
| EMISSIONS UNIT ID/Description | | Semi. | METHOD USED TO DETERMINE | | DURATION | DESCRIPTION AND MAGNITUDE | PROBABLE CAUSE FOR THE DEVIATION | ACTIONS / | | REPORT DATE (If no reports were made, state | , , |
| 15/5030Hption | Quarterly | | COMPLIANCE | | OF THE DEVIATION | | MEASURES TAKEN | If Yes, continue to the next column) | "No Reports" in the space below) | "No Reports" in the space below) | |
| P007 - FCCU / CO Boiler Bypass Stack | Yes | No | Continuous Emissions Monitoring System (CEMS) | 10/3/2021 at 03:00 hours | 10/3/2021 at 10:00:00 AM | CEMS downtime for 420 minutes | Sample Line Maintenance | Replaced the sample line cooler, recalibrated, and returned to service | No | No Reports | No Reports |
| P007 - FCCU / CO Boiler Bypass Stack | Yes | No | Continuous Emissions Monitoring System (CEMS) | 11/18/2021 at 10:00 hours | 11/18/2021 at 12:00 hours | CEMS downtime for 120 minutes | CGA Test Completed | Recalibrated and Returned Analyzer to service. | No | No Reports | No Reports |

Pollutant: NOx

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 93.4 ppmv NOx db @ 0% O2 (7-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summarv | | CEMS Perfomance Summary | |
|---|----------|--|------|
| 1. Duration of excess emissions in reporting period due | e to: | CEMS downtime in reporting period due to: | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 7 |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 |
| c. Process Problems | 0 | c. Quality assurance calibration | 2 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 9 |
| 3. Total duration of excess emissions x (100) / 0 | | 3. [Total CEMS Downtime] x (100) / [Total source | 0.41 |
| [Total source operating time] % ³ | <u> </u> | operating time] % ³ | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Title: President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

Pollutant: NOx

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 58.1 ppmv NOx db @ 0% O2 (365-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CEMS Perfomance Summary | | |
|---|--------|---|------|--|
| 1. Duration of excess emissions in reporting period d | ue to: | CEMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 7 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 2 | |
| d. Other known causes | 0 | d. Other known causes | 0 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 9 | |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CEMS Downtime] x (100) / [Total source | 0.41 | |
| [Total source operating time] %3 | | operating time] % ³ | | |
| 2 Record all times in hours. 3 For the reporting period: If the total duration of excess e | | rcent or greater of the total operating time or the total CMS downtime is | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Des Gillen

Des Gillen

Des Gillen

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

| | BP-HUSKY REFINING LLC - FCC/CO BOILER NOx CEMS REPORT 4TH QUARTER 2021 | | | | | | | | | | |
|--|--|-----------------------|---|------------------------------|------------------------------|--|-------------------------------------|---|--|--|--|
| | | orting ent (choose | ACTUAL | | DEVIATIO INFORMAT | | | CORRECTIVE | WAS DEVIATION | MALFUNCTION VERBAL | MALFUNCTION WRITTEN |
| EMISSIONS UNIT ID/Description | Quarterly | Semi- Annual | METHOD USED TO DETERMINE COMPLIANCE | | DURATION Date / Time End | DESCRIPTION AND MAGNITUDE OF THE DEVIATION | PROBABLE CAUSE FOR THE DEVIATION | ACTIONS / PREVENTATIVE MEASURES TAKEN | ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column) | REPORT DATE (If no reports were made, state "No Reports" in the space below) | REPORT DATE (If no reports were made, state "No Reports" in the space below) |
| P007 - FCCU / CO Boiler Bypass Stack | Yes | No | Continuous Emissions Monitoring System (CEMS) | 10/3/2021 at 03:00 hours | 10/3/2021 at 10:00 hours | CEMS downtime for 420 minutes | Sample Line Maintenance | Replaced the sample line cooler, recalibrated, and returned to service | No | No Reports | No Reports |
| P007 - FCCU / CO Boiler Bypass Stack | Yes | No | Continuous Emissions Monitoring System (CEMS) | 11/18/2021 at 10:00 hours | 11/18/2021 at 12:00 hours | CEMS downtime for 120 minutes | CGA Test Completed | Recalibrated and Returned Analyzer to service. | No | No Reports | No Reports |

| Pol | lluta | nt: | SO ₂ |
|-----|-------|-----|-----------------|
|-----|-------|-----|-----------------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 260 ppmvd SO2 at 0% excess O2 as a rolling 7-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CEMS Perfomance Summary | | | |
|--|--------|--|------|--|--|
| 1. Duration of excess emissions in reporting period de | ue to: | CEMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 7 | | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | | |
| c. Process Problems | 0 | c. Quality assurance calibration | 2 | | |
| d. Other known causes | 0 | d. Other known causes | 0 | | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | | |
| 2. Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 9 | | |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CEMS Downtime] x (100) / [Total source | 0.41 | | |
| [Total source operating time] % ³ | | operating time] % ³ | | | |
| ² Record all times in hours. ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent. | | | | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Des Gillen

Des Gillen

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

| Polluta | nt: S | O_2 |
|----------------|-------|-------|
|----------------|-------|-------|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 160 ppmvd SO2 at 0% excess O2 as a rolling 365-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CEMS Perfomance Summary | | | |
|--|--------|--|------|--|--|
| 1. Duration of excess emissions in reporting period du | ie to: | CEMS downtime in reporting period due to: | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 7 | | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | | |
| c. Process Problems | 0 | c. Quality assurance calibration | 2 | | |
| d. Other known causes | 0 | d. Other known causes | 0 | | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | | |
| 2. Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 9 | | |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CEMS Downtime] x (100) / [Total source | 0.41 | | |
| [Total source operating time] % ³ | | operating time] % ³ | | | |
| 2 Record all times in hours. | | · | | | |

³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

| Pollutant: So | O٥ |
|---------------|----|
|---------------|----|

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation:1,020 tons SO2 per rolling 12-month periodAddress:4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CEMS Perfomance Summary | | |
|---|--------------------|--|----------------|--|
| 1. Duration of excess emissions in reporting period of | due to: | CEMS downtime in reporting period due to: | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 7 | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | |
| c. Process Problems | 0 | c. Quality assurance calibration | 2 | |
| d. Other known causes | 0 | d. Other known causes | 0 | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | |
| 2. Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 9 | |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CEMS Downtime] x (100) / [Total source | 0.41 | |
| [Total source operating time] % ³ 2 Record all times in hours. | | operating time] % ³ | | |
| ³ For the reporting period: If the total duration of excess 6 | emissions is 1 per | rcent or greater of the total operating time or the total CMS downtime | e is 5 percent | |

or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |
| | |

¹ Form described in 40 CFR 60.7 (d)

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.92 lb SO2 per 1000 lb of fresh feed

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

| Emission Data Summary | | CEMS Perfomance Summary | | | | | | | |
|---|--------|--|------|--|--|--|--|--|--|
| 1. Duration of excess emissions in reporting period du | ie to: | CEMS downtime in reporting period due to: | | | | | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 7 | | | | | | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | | | | | | |
| c. Process Problems | 0 | c. Quality assurance calibration | 2 | | | | | | |
| d. Other known causes | 0 | d. Other known causes | 0 | | | | | | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | | | | | | |
| 2. Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 9 | | | | | | |
| 3. Total duration of excess emissions x (100) / | 0 | 3. [Total CEMS Downtime] x (100) / [Total source | 0.41 | | | | | | |
| [Total source operating time] % ³ operating time] % ³ 2 Record all times in hours. 3 For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time or the total cms. | | | | | | | | | |

or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

D

¹ Form described in 40 CFR 60.7 (d)

| | BP-HUSKY REFINING LLC - FCC/CO BOILER SO2 CEMS REPORT 4TH QUARTER 2021 | | | | | | | | | | | | | |
|--|--|-----------------------|--|--|------------------------------|--------------------------------------|-------------------------|---|---|--|--|--|--|--|
| EMISSIONS UNIT | Requireme | orting ent (choose | ACTUAL METHOD USED | DEVIATION INFORMATION DEVIATION DURATION DES | | | PROBABLE CAUSE FOR | CORRECTIVE ACTIONS / | WAS DEVIATION ATTRIBUTABLE TO A | MALFUNCTION VERBAL REPORT DATE | MALFUNCTION WRITTEN REPORT DATE | | | |
| | Quarterly | Semi- Annual | TO DETERMINE COMPLIANCE | Date / Time Start | Date / Time End | AND MAGNITUDE OF THE DEVIATION | THE DEVIATION | PREVENTATIVE MEASURES TAKEN | MALFUNCTION? (Yes or No- If Yes, continue to the next column) | (If no reports were made, state "No Reports" in the space below) | (If no reports were made, state "No Reports" in the space below) | | | |
| P007 - FCCU / CO Boiler Bypass Stack | Yes | No | Continuous Emissions Monitoring System (CEMS) | 10/3/2021 at 03:00 hours | 10/3/2021 at 10:00 hours | CEMS downtime for 420 minutes | Sample Line Maintenance | Replaced the sample line cooler, recalibrated, and returned to service | No | No Reports | No Reports | | | |
| P007 - FCCU / CO Boiler Bypass Stack | Yes | No | Continuous Emissions Monitoring System (CEMS) | 11/18/2021 at 10:00 hours | 11/18/2021 at 12:00 hours | CEMS downtime for 120 minutes | CGA Test Completed | Recalibrated and Returned Analyzer to service. | No | No Reports | No Reports | | | |

Pollutant: SO₂

Reporting Period Dates:

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

From: October 1, 2021

To:

This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods

of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in

January 1, 2022

| Company: | BP-Husky Refining LLC | | | | | | | | | |
|--|---|---|------|--|------|--|--|--|--|--|
| Emission Limitation: | 250 ppm | 250 ppm SO ₂ dry, 0% excess O ₂ (12-hour average) | | | | | | | | |
| Address: | 4001 Cedar Point Road, Oregon, Ohio 43616 | | | | | | | | | |
| Monitor Manufacturer and Model No.: | Ametek | Ametek Model 919, SN: ZB-919SP-10541-1 | | | | | | | | |
| Date of Latest CEMS Certification or Audit: | 11/1/202 | <u>'</u> 1 | | | | | | | | |
| Process Unit(s) Description: | #1 Claus | Sulfur Rec | over | y Unit with SCOT Unit (0448020007P009) | | | | | | |
| Total Source Operating Time in Reporting P | Period ² : | 2,209 | 9 | <u>hr</u> | | | | | | |
| Emission Data Summary | | | CE | MS Perfomance Summary | | | | | | |
| 1. Duration of excess emissions in reporting p | period due | to: | 1. | CEMS downtime in reporting period due to: | | | | | | |
| a. Start-up/Shutdown ⁴ : | | 63 | | a. Monitor equipment malfunctions | 1 | | | | | |
| b. Control equipment problems | | 0 | | b. Non-monitor equipment malfunctions | 0 | | | | | |
| c. Process Problems | | 0 | | c. Quality assurance calibration | 0 | | | | | |
| d. Other known causes | | 0 | | d. Other known causes | 10 | | | | | |
| e. Unknown causes | | 0 | | e. Unknown causes | 0 | | | | | |
| 2. Total duration of excess emissions | | 63 | 2. | Total CEMS Downtime | 11 | | | | | |
| 3. Total duration of excess emissions x (100) | / | 2.85 | 3. | [Total CEMS Downtime] x (100) / [Total source | 0.50 | | | | | |
| [Total source operating time] % ^{3,4} | | | | operating time] % ³ | | | | | | |
| ² Record all times in minutes. | | | | | | | | | | |
| i or are reperang period. | | • | | or greater of the total operating time or the total CMS downting summary report form and the excess emission report shall be | | | | | | |

Describe any changes since last quarter in CEMS, process, or controls.

the applicable standard.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

| Des Gillen |
|-----------------------------------|
| DocuSigned by: Des Gillen |
| President - BP-Husky Refining LLC |
| 1/31/2022 |
| |

⁴ For the reporting period:

¹ Form described in 40 CFR 60.7 (d)

| | BP-HUSKY REFINING LLC SRU #1 SO2 CEMS REPORT FOR 4TH QUARTER 2021 | | | | | | | | | | | | | |
|--|---|--------|--|------------------------------|------------------------------|--|---|---|--|---|---|--|--|--|
| | Reporting Requirement (choose one or both) | | ACTUAL METHOD | DEVIATION INFORMATION | | | | CORRECTIVE ACTIONS / | WAS DEVIATION ATTRIBUTABLE TO A | MALFUNCTION VERBAL REPORT DATE | MALFUNCTION WRITTEN REPORT DATE | | | |
| EMISSIONS UNIT ID/Description | Quarterly | Semi- | USED TO DETERMINE COMPLIANCE | DEVIATION | | DESCRIPTION AND MAGNITUDE | PROBABLE CAUSE FOR THE DEVIATION | PREVENTATIVE MEASURES TAKEN | MALFUNCTION? (Yes or No - If Yes, continue to the next | (If no reports were made, state "NO REPORTS" in the space | (If no reports were made, state "NO REPORTS" in the space | | | |
| | | Annual | | Date / Time Start | Date / Time End | OF THE DEVIATION | | | column) | below) | below) | | | |
| P009 - Sulfur Recovery Unit #1 | Yes | No | Continuous Emission Monitoring System (CEMS) | 10/12/2021 at 00:00 hours | 10/14/2021 at 2:00:00 PM | CEMS excess emissions for 3780 minutes | The Sulfur Recovery Unit #1 was in the process of going into a shutdown mode when excess emissions occured. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. | Not Applicable | No | No Reports | No Reports | | | |
| P009 - Sulfur Recovery Unit #1 | Yes | No | Continuous Emission Monitoring System (CEMS) | 10/21/2021 at 13:00 hours | 10/21/2021 at 14:00 hours | CEMS downtime for 60 minutes | Sample Line Maintenance | Steamed sample select valve due to low sample flow | No | No Reports | No Reports | | | |
| P009 - Sulfur Recovery Unit #1 | Yes | No | Continuous Emission Monitoring System (CEMS) | 11/29/2021 at 10:00 hours | 11/29/2021 at 15:00 hours | CEMS downtime for 300 minutes | Semi-annual PM | Semi-Annual PM on the sample cell | No | No Reports | No Reports | | | |
| P009 - Sulfur Recovery Unit #1 | Yes | No | Continuous Emission Monitoring System (CEMS) | 12/3/2021 at 09:00 hours | 12/3/2021 at 13:00 hours | CEMS downtime for 240 minutes | Quarterly PM | Steamed sample line, purged with nitrogen, recalibrated and returned to service | | No Reports | No Reports | | | |
| P009 - Sulfur Recovery Unit #1 | Yes | No | Continuous Emission Monitoring System (CEMS) | 12/16/2021 at 09:00 hours | 12/16/2021 at 10:00 hours | CEMS downtime for 60 minutes | Recalibrate for Drift | Recalibrated and Returned Analyzer to service. | No | No Reports | No Reports | | | |

Excess Emission and Monitoring System Performance Report #1 Claus Sulfur Recovery Unit CEMS Report (Source # P009) 4Q 2021

In accordance with the applicable PTIs for this source, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

#1 Claus Sulfur Recovery Unit operated for a total of 2209 hours in 4Q. There was one period of excess emissions for this CEMS while the unit was going into a shutdown mode. Total excess emissions from this period exceeded 250 ppm SO2 on a rolling 12 hour basis.

• Start time: 10/12/2021 at 00:00 End time: 10/14/2021 14:00

Duration: 63 hours

This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

There was one period of excess emissions for this CEMS associated with a planned start-up and shutdown and it is listed below. Normal start-up/shutdown procedures were followed

• Start time: 10/12/2021 at 00:00 End time: 10/14/2021 14:00

Duration: 63 hours

This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

Excess Emission and Monitoring System Performance Report #1 Claus Sulfur Recovery Unit CEMS Report (Source # P009) 4Q 2021

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There was four periods of CEMS downtime for the quarter while the source was in operation and it is listed below:

• Start time: 10/21/2021 13:00 End time: 10/21/2021 14:00

Duration: 1 hours

This period of downtime was due to sample line maintenance. The select valve was cleared and was recalibrated and returned to service.

• Start time: 11/29/2021 10:00 End time: 11/29/2021 15:00

Duration: 5 hours

This period of downtime was due to semi-annual preventative maintenance on the sample cell.

• Start time: 12/3/2021 09:00 End time: 12/3/2021 13:00

Duration: 4 hours

This period of downtime was due to quarterly preventative maintenance on the sample system.

• Start time: 12/16/2021 09:00 End time: 12/16/2021 10:00

Duration: 1 hour

This period of downtime was due system checks on the sample system for drift. It was recalibrated and returned to service.

| Pollutant: SO ₂ | | | | |
|----------------------------|-------|-----------------|-----|----------------|
| Reporting Period Dates: | From: | October 1, 2021 | To: | January 1, 202 |

Company: BP-Husky Refining LLC

Emission Limitation: 250 ppm SO₂ dry, 0% excess O₂ (12-hour average)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Ametek Model 919 and WDG-V, SN: ZX-919-10814-1

Date of Latest CEMS Certification or Audit: 11/1/2021

Process Unit(s) Description: Sulfur Recovery Units # 2 & #3 with TGT #2 (0448020007P037)

Total Source Operating Time in Reporting Period²: 2,209 hr

| Ε | mission Data Summary | CEMS Perfomance Summary | | | | | | | | |
|----|--|-------------------------|--|------|--|--|--|--|--|--|
| 1. | . Duration of excess emissions in reporting period due | e to: | CEMS downtime in reporting period due to: | | | | | | | |
| | a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions 0 | | | | | | | |
| | b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions 0 | | | | | | | |
| | c. Process Problems | 23 | c. Quality assurance calibration | 0 | | | | | | |
| | d. Other known causes | 0 | d. Other known causes | 6 | | | | | | |
| | e. Unknown causes | 0 | e. Unknown causes | 0 | | | | | | |
| 2. | . Total duration of excess emissions | 23 | 2. Total CEMS Downtime | | | | | | | |
| 3. | . Total duration of excess emissions x (100) / | 1.04 | 3. [Total CEMS Downtime] x (100) / [Total source | 0.27 | | | | | | |
| - | [Total source operating time] % ^{3,4} | | operating time] % ³ | | | | | | | |
| | ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit turings of the applicable emission limit turings. | | | | | | | | | |
| | submitted. | | | | | | | | | |

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

| Des Gillen |
|-----------------------------------|
| Des Gillen |
| President - BP-Husky Refining LLC |
| 1/31/2022 |
| |

¹ Form described in 40 CFR 60.7 (d)

| | BP-HUSKY REFINING LLC SRU #2 & SRU #3 SO2 CEMS REPORT FOR 4TH QUARTER 2021 | | | | | | | | | | | | |
|---|--|-----------------|--|------------------------------|-------------------------------|---|--|---|--------------------------------------|---|--|--|--|
| EMISSIONS UNIT ID / | Reporting Requirement (choose one or both) | | ACTUAL METHOD USED | DEVIATION INFORMATION | | | PROBABLE CAUSE FOR THE | CORRECTIVE ACTIONS / | WAS DEVIATION ATTRIBUTABLE TO A | MALFUNCTION VERBAL REPORT DATE | MALFUNCTION WRITTEN REPORT DATE | | |
| Description | Quarterly | Semi- Annual | TO DETERMINE COMPLIANCE | DEVIATION Date / Time Start | ON DURATION Date / Time End | DESCRIPTION AND MAGNITUDE OF THE DEVIATION | DEVIATION | PREVENTATIVE MEASURES TAKEN | If Yes, continue to the next column) | "No Reports were made, state "No Reports" in the space below) | (If no reports were made, state "No Reports" in the space below) | | |
| P037 - Sulfur Recovery Units #2 & #3 | Yes | No | Continuous Emission Monitoring System (CEMS) | 10/14/2021 at 05:00 hours | 10/14/2021 at 4:00:00 PM | CEMS excess emissions for 660 minutes | Coker 3 Restart -This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. | Coker 3 gas plant was restarted and resulted in an excess of acid gas in the system. Operations slowed down the generation of acid gas. | Yes | No Reports | No Reports | | |
| P037 - Sulfur Recovery Units #2 & #3 | Yes | No | Continuous Emission Monitoring System (CEMS) | 11/30/2021 at 08:00 hours | 11/30/2021 at 14:00 hours | CEMS downtime for 360 minutes | Semi-annual PM | Semi-Annual PM on the sample cell | No | No Reports | No Reports | | |
| P037 - Sulfur Recovery Units #2 & #3 | Yes | No | Continuous Emission Monitoring System (CEMS) | 12/11/2021 at 03:00 hours | 12/11/2021 at 15:00 hours | CEMS excess emissions for 720 minutes | A third party acid gas receiver shutdown and resulted in an excess of acid gas at the Sulfur Recovery Units resulting in excess emissions of SO2 - This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. | Process adjustments were made to reduce acid gas volume until the third party receiver could be restarted. | Yes | 12/11/2021 | 12/11/2021 | | |

Excess Emission and Monitoring System Performance Report #2 and 3 Claus Sulfur Recovery Unit CEMS Report (Source # P037) 4Q 2021

In accordance with the applicable PTIs for this source, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

#2 and 3 Sulfur Recovery Units operated for a total of 2209 hours in 4Q. There were twos period of excess emissions for this CEMS. Total excess emissions from these periods exceeded 250 ppm SO2 on a rolling 12 hour basis.

• Start time: 10/14/2021 at 05:00 End time: 10/14/2021 16:00

Duration: 11 hours

This period of excess emissions was due to the Coker 3 Unit restart. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

• Start time: 12/11/2021 at 03:00 End time: 12/11/2021 15:00

Duration: 12 hours

This period of excess emissions was due to a third-party acid gas receiver shutting down. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

#2 and 3 Sulfur Recovery Units operated for a total of 2209 hours in 4Q. There were twos period of excess emissions for this CEMS associated with start-ups, shutdowns, and malfunctions.

• Start time: 10/14/2021 at 05:00 End time: 10/14/2021 16:00

Duration: 11 hours

Excess Emission and Monitoring System Performance Report #2 and 3 Claus Sulfur Recovery Unit CEMS Report (Source # P037) 4Q 2021

This period of excess emissions was due to the Coker 3 Unit restart. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

• Start time: 12/11/2021 at 03:00 End time: 12/11/2021 15:00

Duration: 12 hours

This period of excess emissions was due to a third-party acid gas receiver shutting down. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There was one period of CEMS downtime for the quarter while the source was in operation and it is listed below:

• Start time: 11/30/2021 08:00 End time: 11/30/2021 14:00

Duration: 6 hours

This period of downtime was due to semi-annual preventative maintenance on the sample cell. The CEMS was calibrated and returned to service.

Additional Information Required under PTI # 04-1046

1. Total SO₂ emissions during calendar quarter (in tons), including any excess emissions attributed to the malfunction, startup, or shutdown of emissions unit P037. (ST&C III.A.iii)

Total SO₂ emissions from the TRP SRUs during the period October 1, 2021 through December 31, 2021 were calculated at 10.9 tons.

2. Total operating time of the CEMS while either SRU was online. (ST&C III.A.iii)

During the quarter, the total source operating time while either or both SRUs were in service was 2,209 hours. The CEMS was online and monitoring for 2,203 hours while either SRU was in service.

During the quarter, there were no periods of CEMS out-of-control time and one (1) period of CEMS downtime for a total duration of 2 hours. Details of this event are summarized in the table attached.

3. Quantification of emissions routed from the SRU to the flare beginning with activation of the relief valve until the release is over. (ST&C VII.A)

There were no periods during the 4th quarter when acid gas was sent to the TRP Acid Gas flare.

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

| Pollutant: NOx | | | | |
|--|--------------------------------|---|---|--------------|
| Reporting Period Dates: | From: October 1 | <u>, 2021</u> To : | <u>January 1, 2022</u> | |
| Company: | BP-Husky Refining | <u>g LLC</u> | | |
| Address: | 4001 Cedar Point | Road, Oregon, Ohio | 43616 | |
| Monitor Manufacturer and Model No.: | ABB LIMAS 11UV | and ABB MAGNOS | <u>O2</u> | |
| Monitor Location: | | ast Alstom Boiler Standjacent the boiler. | ck; monitor housed at ground leve | l in an |
| Date of Latest CMS Cert or Audit: | 12/22/2021 | | | |
| Process Unit(s) Description: | East Alstom Boiler | (0448020007B034) | ! gas was combusted for 0 hours and n | atural na |
| Total Source Operating Time in Reporting I | Period: 2,20 | • | ousted for 2,209 hours for a total of 2,2 | • |
| CMS operating time while emission unit wa | as in operation: | 2,208 hr | , | |
| Emission Limitation: | 12.71 lb/hr of NO _x | emissions; | | |
| | 38.5 tons/rolling 12 | 2-month period of No | $O_{\rm x}$ emissions (combined B034 & B0 | <u>035);</u> |
| | 0.10 lb NO _x (as NO | O ₂) per mmBtu heat | input 30-day rolling average | |
| Emission Data Summary | | CMS Perfomance | Summary | |
| 1. Duration of excess emissions in reporting | period due to: | 1. CMS downtime | in reporting period due to: | |
| | • | | · | |

| Emission Data Summary | CMS Perfomance Summary | | | | |
|--|--|--|------------|--|--|
| 1. Duration of excess emissions in reporting period du | CMS downtime in reporting period due to: | | | | |
| a. Start-up/Shutdown: | 0 | a. Monitor equipment malfunctions | 0 | | |
| b. Control equipment problems | 0 | b. Non-monitor equipment malfunctions | 0 | | |
| c. Process Problems | 0 | c. Quality assurance calibration | 1 | | |
| d. Other known causes | 0 | d. Other known causes | 0 | | |
| e. Unknown causes | 0 | e. Unknown causes | 0 | | |
| 2. Total duration of excess emissions | 0 | 2. Total CEMS Downtime | 1 | | |
| Total duration of excess emissions x (100) / [Total source operating time] %³ | 0 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.05 | | |
| Record all times in hours. For the reporting period: If the total duration of excess em | nissions is 1 | percent or greater of the total operating time or the total CMS dowr | itime is 5 | | |

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - No changes since last quarter.

I certify that the information contained in this report is true, accurate, and complete.

| Name: | Des Gillen |
|------------|-----------------------------------|
| Signature: | Docusigned by: Des Gillen |
| Title: | President - BP-Husky Refining LLC |
| Date: | 1/31/2022 |

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST ALSTOM BOILER NOx CEMS REPORT FOR 4TH QUARTER 2021

| | | Requirement one or both) | ACTUAL METHOD USED | | DEVIATIO INFORMAT | | PROBABLE CAUSE | CORRECTIVE ACTIONS / | WAS DEVIATION ATTRIBUTABLE TO A | MALFUNCTION VERBAL REPORT DATE | MALFUNCTION WRITTEN REPORT DATE | |
|-------------------------------|-----------|--------------------------|---------------------------------|-------------------------------|----------------------|--|-------------------------------------|--|---|--|--|--|
| EMISSIONS UNIT ID/Description | Quarterly | Semi- Annual | TO DETERMINE COMPLIANCE | DEVIATION Date / Time Start | Date / Time | DESCRIPTION AND MAGNITUDE OF THE DEVIATION | IPTION AND DEVIATION PREVIOUS MEASU | | MALFUNCTION? (Yes or No- If Yes, continue to the next column) | (If no reports were made, state "NO REPORTS" in the space below) | (If no reports were made, state "NO REPORTS" in the space below) | |
| B034 - Eest Alstom Boiler | Yes | No | Continuous Monitoring System | | | CEMS downtime for 60 minutes | CGA Test Completed | Recalibrated and Returned Analyzer to service. | No | No Reports | No Reports | |

East Alstom Boiler - 4th Quarter 2021 Db Data

NSPS Db: Supplemental Reporting for NO_x CEM Records as required by 40 CFR 49b(i)

This table contains the information required by 60.49(g)(1-8). Records for (g)(9-10) are provided in the NSPS Quarterly CEMS Report.

East Alstom Boiler (B034): 353 MMBtu/hr heater fired with refinery fuel gas and/or natural gas

Calculation Methodology: NO_x emissions (lb/mmbtu) calculated from NO_x CEM (ppm) using Methodology in 40 CFR 60 Appendix A Method 19 and F factor of 8710 dscf/mmbtu from Method 19 Table 19-1 when natural gas fired; site-specific F factor determined from fuel analysis when refinery fuel gas fired.

NSPS Limit: 0.10 lb NO_v/MMBtu

| | NSPS Limit: 0.10 lb NO _x /MMBtu | | | | | | | | | | | |
|--------------------------|--|---|---------------------------------|---|--|--|--|--|--|--|--|--|
| Date | Hourly daily average NOx (lb/MMBtu) | 30-day rolling average NOx (lb/MMBtu) | Excess Emissions (yes/no) | NOx Conc Exceeded CEM Span? (yes/no) | Comments: Reason for Missing or Invalid Data, or Excess Emissions | | | | | | | |
| 10/1/2021 | 0.024 | 0.023 | No | No | | | | | | | | |
| 10/2/2021 | 0.024 | 0.023 | No | No | | | | | | | | |
| 10/3/2021 | 0.024 | 0.023 | No | No | | | | | | | | |
| 10/4/2021 | 0.024 | 0.023 | No | No | | | | | | | | |
| 10/5/2021 | 0.023 | 0.023 | No | No | | | | | | | | |
| 10/6/2021 | 0.025 | 0.023 | No | No | | | | | | | | |
| 10/7/2021 | 0.026 | 0.024 | No | No | | | | | | | | |
| 10/8/2021 | 0.025 | 0.024 | No | No | | | | | | | | |
| 10/9/2021 | 0.024 | 0.024 | No | No | | | | | | | | |
| 10/10/2021 | 0.030 | 0.024 | No | No | | | | | | | | |
| 10/11/2021 10/12/2021 | 0.027 0.027 | 0.024 0.024 | No No | No No | | | | | | | | |
| 10/13/2021 | 0.027 | 0.024 | No | No | | | | | | | | |
| 10/13/2021 | 0.028 | 0.025 | No | No | | | | | | | | |
| 10/15/2021 | 0.022 | 0.024 | No | No | | | | | | | | |
| 10/16/2021 | 0.024 | 0.025 | No | No | | | | | | | | |
| 10/17/2021 | 0.024 | 0.025 | No | No | | | | | | | | |
| 10/18/2021 | 0.027 | 0.025 | No | No | | | | | | | | |
| 10/19/2021 | 0.027 | 0.025 | No | No | | | | | | | | |
| 10/20/2021 | 0.025 | 0.025 | No | No | | | | | | | | |
| 10/21/2021 | 0.025 | 0.026 | No | No | | | | | | | | |
| 10/22/2021 | 0.027 | 0.026 | No | No | | | | | | | | |
| 10/23/2021 | 0.028 | 0.026 | No | No | | | | | | | | |
| 10/24/2021 | 0.029 | 0.026 | No | No | | | | | | | | |
| 10/25/2021 | 0.029 | 0.026 | No | No | | | | | | | | |
| 10/26/2021 | 0.027 | 0.026 | No | No | | | | | | | | |
| 10/27/2021 | 0.025 | 0.026 | No | No | | | | | | | | |
| 10/28/2021 | 0.028 | 0.026 | No | No | | | | | | | | |
| 10/29/2021 | 0.027 | 0.026 | No | No | | | | | | | | |
| 10/30/2021 | 0.027 | 0.026 | No | No | | | | | | | | |
| 10/31/2021 | 0.024 | 0.026 | No | No | | | | | | | | |
| 11/1/2021 | 0.026 | 0.026 | No | No | | | | | | | | |
| 11/2/2021 | 0.028 | 0.026 | No | No | | | | | | | | |
| 11/3/2021 | 0.029 | 0.026 | No | No | | | | | | | | |
| 11/4/2021 | 0.030 | 0.027 | No | No | | | | | | | | |
| 11/5/2021 | 0.030 | 0.027 | No | No | | | | | | | | |
| 11/6/2021 | 0.026 | 0.027 | No | No | | | | | | | | |
| 11/7/2021 | 0.023 | 0.027 | No | No | | | | | | | | |
| 11/8/2021 | 0.023 | 0.027 | No | No | | | | | | | | |
| 11/9/2021 11/10/2021 | 0.022 0.027 | 0.026 0.026 | No No | No No | | | | | | | | |
| 11/11/2021 | 0.027 | 0.026 | No | No | | | | | | | | |
| 11/11/2021 | 0.023 | 0.026 | No No | No | | | | | | | | |
| 11/13/2021 | 0.024 | 0.026 | No | No | | | | | | | | |
| 11/14/2021 | 0.025 | 0.026 | No | No | | | | | | | | |
| 11/15/2021 | 0.025 | 0.026 | No | No | | | | | | | | |
| 11/16/2021 | 0.026 | 0.026 | No | No | | | | | | | | |
| 11/17/2021 | 0.024 | 0.026 | No | No | | | | | | | | |
| 11/18/2021 | 0.029 | 0.026 | No | No | | | | | | | | |
| 11/19/2021 | 0.030 | 0.026 | No | No | | | | | | | | |
| 11/20/2021 | 0.029 | 0.027 | No | No | | | | | | | | |
| 11/21/2021 | 0.029 | 0.027 | No | No | | | | | | | | |
| 11/22/2021 | 0.030 | 0.027 | No | No | | | | | | | | |
| 11/23/2021 | 0.031 | 0.027 | No | No | | | | | | | | |
| 11/24/2021 | 0.026 | 0.027 | No | No | | | | | | | | |
| 11/25/2021 | 0.020 | 0.026 | No | No | | | | | | | | |

| Date | Hourly daily average NOx (lb/MMBtu) | 30-day rolling average NOx (lb/MMBtu) | Excess Emissions (yes/no) | NOx Conc Exceeded CEM Span? (yes/no) | Comments: Reason for Missing or Invalid Data, or Excess Emissions |
|------------|---|---|---------------------------------|---|--|
| 11/26/2021 | 0.020 | 0.026 | No | No | |
| 11/27/2021 | 0.020 | 0.026 | No | No | |
| 11/28/2021 | 0.019 | 0.026 | No | No | |
| 11/29/2021 | 0.020 | 0.026 | No | No | |
| 11/30/2021 | 0.020 | 0.025 | No | No | |
| 12/1/2021 | 0.020 | 0.025 | No | No | |
| 12/2/2021 | 0.019 | 0.025 | No | No | |
| 12/3/2021 | 0.020 | 0.025 | No | No | |
| 12/4/2021 | 0.022 | 0.024 | No | No | |
| 12/5/2021 | 0.021 | 0.024 | No | No | |
| 12/6/2021 | 0.022 | 0.024 | No | No | |
| 12/7/2021 | 0.026 | 0.024 | No | No | |
| 12/8/2021 | 0.033 | 0.024 | No | No | |
| 12/9/2021 | 0.035 | 0.025 | No | No | |
| 12/10/2021 | 0.033 | 0.025 | No | No | |
| 12/11/2021 | 0.024 | 0.025 | No | No | |
| 12/12/2021 | 0.023 | 0.025 | No | No | |
| 12/13/2021 | 0.024 | 0.025 | No | No | |
| 12/14/2021 | 0.021 | 0.025 | No | No | |
| 12/15/2021 | 0.019 | 0.025 | No | No | |
| 12/16/2021 | 0.020 | 0.024 | No | No | |
| 12/17/2021 | 0.024 | 0.024 | No | No | |
| 12/18/2021 | 0.025 | 0.024 | No | No | |
| 12/19/2021 | 0.025 | 0.024 | No | No | |
| 12/20/2021 | 0.025 | 0.024 | No | No | |
| 12/21/2021 | 0.027 | 0.024 | No | No | |
| 12/22/2021 | 0.024 | 0.024 | No | No | |
| 12/23/2021 | 0.023 | 0.023 | No | No | |
| 12/24/2021 | 0.022 | 0.023 | No | No | |
| 12/25/2021 | 0.021 | 0.023 | No | No | |
| 12/26/2021 | 0.022 | 0.023 | No | No | |
| 12/27/2021 | 0.022 | 0.023 | No | No | |
| 12/28/2021 | 0.022 | 0.024 | No | No | |
| 12/29/2021 | 0.022 | 0.024 | No | No | |
| 12/30/2021 | 0.023 | 0.024 | No | No | |
| 12/31/2021 | 0.022 | 0.024 | No | No | |

FIGURE 1 - SUMMARY REPORT GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

| Pol | llutant: | NOx |
|-----|----------|-----|
|-----|----------|-----|

Emission Limitation:

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2

Monitor Location: Sample port on West Alstom Boiler Stack; monitor housed at ground level in an

analyzer building adjacent the boiler.

2.200

Date of Latest CMS Certification or Audit: 12/22/2021

Process Unit(s) Description: West Alstom Boiler (0448020007B035)

(TIU fuel gas was combusted for 2,209 hours and natural

Total Source Operating Time in Reporting Period: 2,209 hr gas was combusted for 0 hours for a total of 2,209 hours

this quarter)

CMS operating time while emission unit was in operation:

12.71 lb/hr of NO_x emissions;

38.5 tons/rolling 12-month period of NO_x emissions (combined B034 & B035);

0.10 lb NO_x (as NO₂) per mmBtu heat input 30-day rolling average

| Duration of excess emissions in reporting period due to: | | | | |
|--|--|---|--|--|
| 0 | a. Monitor equipment malfunctions | 9 | | |
| 0 | b. Non-monitor equipment malfunctions | 0 | | |
| 0 | c. Quality assurance calibration | 0 | | |
| 0 | d. Other known causes | 0 | | |
| 0 | e. Unknown causes | 0 | | |
| 0 | 2. Total CEMS Downtime | 9 | | |
| 0 | 3. [Total CMS Downtime] x (100) / [Total source operating time] % ³ | 0.41 | | |
| <u> </u> | 0 0 0 0 0 | 0 a. Monitor equipment malfunctions 0 b. Non-monitor equipment malfunctions 0 c. Quality assurance calibration 0 d. Other known causes 0 e. Unknown causes 0 2. Total CEMS Downtime 3. [Total CMS Downtime] x (100) / [Total source | | |

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - No changes since last quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

DocuSigned by:

Signature Des Gillen

Per Gillen

90F20640AD13450...

Title: President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST ALSTOM BOILER NOx CEMS REPORT FOR 4TH QUARTER 2021

| EMISSIONS UNIT ID/Description | (choose o | Requirement ne or both) Semi- Annual | ACTUAL METHOD USED TO DETERMINE COMPLIANCE | DEVIATION Date / Time Start | DEVIATION INFORMAT DURATION Date / Time End | ION | FOR THE | CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN | WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No- If Yes, continue to the next column) | MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below) | MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below) |
|----------------------------------|-----------|---|---|-------------------------------|---|-------------------------------|--------------------------------------|--|---|---|--|
| B035 - West Alstom Boiler | Yes | No | Continuous Monitoring System | 12/21/2021 at 13:00 hours | | CEMS downtime for 540 minutes | Lamp and Ribbon Cable Replacement | Lamp Voltage was low on Limas Analyzer. Upon analyzer start up following the replacement, the ribbon cable had to be replaced | No | No Reports | No Reports |

West Alstom Boiler - 4th Quarter 2021 Db Data

NSPS Db: Supplemental Reporting for NO_x CEM Records as required by 40 CFR 49b(i)

This table contains the information required by 60.49(g)(1-8). Records for (g)(9-10) are provided in the NSPS Quarterly CEMS Report.

West Alstom Boiler (B035): 353 MMBtu/hr heater fired with refinery fuel gas and/or natural gas

Calculation Methodology: NO_x emissions (lb/mmbtu) calculated from NO_x CEM (ppm) using Methodology in 40 CFR 60 Appendix A Method 19 and F factor of 8710 dscf/mmbtu from Method 19 Table 19-1 when natural gas fired; site-specific F factor determined from fuel analysis when refinery fuel gas fired.

NSPS Limit: 0.10 lb NO_x/MMBtu

| | NSPS LIMIT: 0.10 ID NO _x /MINIBTU | | | | | | | | | | | |
|------------|--|-------|---------------------------------|---|--|--|--|--|--|--|--|--|
| Date | (lb/MMBtu) (lb/MMBtu) | | Excess Emissions (yes/no) | NOx Conc Exceeded CEM Span? (yes/no) | Comments: Reason for Missing or Invalid Data, or Excess Emissions | | | | | | | |
| 10/1/2021 | 0.021 | 0.020 | No | No | | | | | | | | |
| 10/2/2021 | 0.021 | 0.020 | No | No | | | | | | | | |
| 10/3/2021 | 0.020 | 0.021 | No | No | | | | | | | | |
| 10/4/2021 | 0.020 | 0.021 | No | No | | | | | | | | |
| 10/5/2021 | 0.021 | 0.021 | No | No | | | | | | | | |
| 10/6/2021 | 0.023 | 0.021 | No | No | | | | | | | | |
| 10/7/2021 | 0.023 | 0.021 | No | No | | | | | | | | |
| 10/8/2021 | 0.025 | 0.021 | No | No | | | | | | | | |
| 10/9/2021 | 0.025 | 0.021 | No | No | | | | | | | | |
| 10/10/2021 | 0.021 | 0.021 | No | No | | | | | | | | |
| 10/11/2021 | 0.020 | 0.021 | No | No | | | | | | | | |
| 10/12/2021 | 0.020 | 0.021 | No | No | | | | | | | | |
| 10/13/2021 | 0.020 | 0.021 | No | No | | | | | | | | |
| 10/14/2021 | 0.019 | 0.021 | No | No | | | | | | | | |
| 10/15/2021 | 0.020 | 0.021 | No | No | | | | | | | | |
| 10/16/2021 | 0.025 | 0.021 | No | No | | | | | | | | |
| 10/17/2021 | 0.025 | 0.021 | No | No | | | | | | | | |
| 10/18/2021 | 0.024 | 0.022 | No | No | | | | | | | | |
| 10/19/2021 | 0.023 | 0.022 | No | No | | | | | | | | |
| 10/20/2021 | 0.022 | 0.022 | No | No | | | | | | | | |
| 10/21/2021 | 0.024 | 0.022 | No | No | | | | | | | | |
| 10/22/2021 | 0.027 | 0.022 | No | No | | | | | | | | |
| 10/23/2021 | 0.025 | 0.022 | No | No | | | | | | | | |
| 10/24/2021 | 0.026 | 0.022 | No | No | | | | | | | | |
| 10/25/2021 | 0.027 | 0.022 | No | No | | | | | | | | |
| 10/26/2021 | 0.026 | 0.022 | No | No | | | | | | | | |
| 10/27/2021 | 0.025 | 0.023 | No | No | | | | | | | | |
| 10/28/2021 | 0.023 | 0.023 | No | No | | | | | | | | |
| 10/29/2021 | 0.021 | 0.023 | No | No | | | | | | | | |
| 10/30/2021 | 0.021 | 0.023 | No | No | | | | | | | | |
| 10/31/2021 | 0.021 | 0.023 | No | No | | | | | | | | |
| 11/1/2021 | 0.021 | 0.023 | No | No | | | | | | | | |
| 11/2/2021 | 0.021 | 0.023 | No | No | | | | | | | | |
| 11/3/2021 | 0.021 | 0.023 | No | No | | | | | | | | |
| 11/4/2021 | 0.021 | 0.023 | No | No | | | | | | | | |
| 11/5/2021 | 0.022 | 0.023 | No | No | | | | | | | | |
| 11/6/2021 | 0.022 | 0.023 | No | No | | | | | | | | |
| 11/7/2021 | 0.021 | 0.022 | No | No | | | | | | | | |
| 11/8/2021 | 0.021 | 0.022 | No | No | | | | | | | | |
| 11/9/2021 | 0.021 | 0.022 | No | No | | | | | | | | |
| 11/10/2021 | 0.020 | 0.022 | No | No | | | | | | | | |
| 11/11/2021 | 0.020 | 0.022 | No | No | | | | | | | | |
| 11/12/2021 | 0.021 | 0.022 | No | No | | | | | | | | |
| 11/13/2021 | 0.022 | 0.023 | No | No | | | | | | | | |
| 11/14/2021 | 0.022 | 0.023 | No | No | | | | | | | | |
| 11/15/2021 | 0.023 | 0.023 | No | No | | | | | | | | |
| 11/16/2021 | 0.023 | 0.022 | No | No | | | | | | | | |
| 11/17/2021 | 0.021 | 0.022 | No | No | | | | | | | | |
| 11/18/2021 | 0.019 | 0.022 | No | No | | | | | | | | |
| 11/19/2021 | 0.020 | 0.022 | No | No | | | | | | | | |
| 11/20/2021 | 0.022 | 0.022 | No | No | | | | | | | | |
| 11/21/2021 | 0.026 | 0.022 | No | No | | | | | | | | |
| 11/22/2021 | 0.027 | 0.022 | No | No | | | | | | | | |
| 11/23/2021 | 0.026 | 0.022 | No | No | | | | | | | | |
| 11/24/2021 | 0.022 | 0.022 | No | No | | | | | | | | |
| 11/25/2021 | 0.022 | 0.022 | No | No | | | | | | | | |
| 11/26/2021 | 0.023 | 0.022 | No | No | | | | | | | | |

| Date | Hourly daily average NOx (lb/MMBtu) | 30-day rolling average NOx (lb/MMBtu) | Excess Emissions (yes/no) | NOx Conc Exceeded CEM Span? (yes/no) | Comments: Reason for Missing or Invalid Data, or Excess Emissions |
|------------|---|---|---------------------------------|---|--|
| 11/27/2021 | 0.023 | 0.022 | No | No | |
| 11/28/2021 | 0.023 | 0.022 | No | No | |
| 11/29/2021 | 0.023 | 0.022 | No | No | |
| 11/30/2021 | 0.023 | 0.022 | No | No | |
| 12/1/2021 | 0.023 | 0.022 | No | No | |
| 12/2/2021 | 0.022 | 0.022 | No | No | |
| 12/3/2021 | 0.023 | 0.022 | No | No | |
| 12/4/2021 | 0.022 | 0.022 | No | No | |
| 12/5/2021 | 0.022 | 0.022 | No | No | |
| 12/6/2021 | 0.022 | 0.022 | No | No | |
| 12/7/2021 | 0.025 | 0.022 | No | No | |
| 12/8/2021 | 0.031 | 0.023 | No | No | |
| 12/9/2021 | 0.032 | 0.023 | No | No | |
| 12/10/2021 | 0.031 | 0.024 | No | No | |
| 12/11/2021 | 0.024 | 0.024 | No | No | |
| 12/12/2021 | 0.023 | 0.024 | No | No | |
| 12/13/2021 | 0.024 | 0.024 | No | No | |
| 12/14/2021 | 0.023 | 0.024 | No | No | |
| 12/15/2021 | 0.023 | 0.024 | No | No | |
| 12/16/2021 | 0.021 | 0.024 | No | No | |
| 12/17/2021 | 0.026 | 0.024 | No | No | |
| 12/18/2021 | 0.025 | 0.024 | No | No | |
| 12/19/2021 | 0.025 | 0.024 | No | No | |
| 12/20/2021 | 0.025 | 0.024 | No | No | |
| 12/21/2021 | 0.017 | 0.024 | No | No | |
| 12/22/2021 | 0.027 | 0.024 | No | No | |
| 12/23/2021 | 0.026 | 0.024 | No | No | |
| 12/24/2021 | 0.025 | 0.024 | No | No | |
| 12/25/2021 | 0.024 | 0.024 | No | No | |
| 12/26/2021 | 0.025 | 0.024 | No | No | |
| 12/27/2021 | 0.027 | 0.024 | No | No | |
| 12/28/2021 | 0.028 | 0.025 | No | No | |
| 12/29/2021 | 0.028 | 0.025 | No | No | |
| 12/30/2021 | 0.029 | 0.025 | No | No | |
| 12/31/2021 | 0.028 | 0.025 | No | No | |

Attachment B – Data Assessment Report

Data Assessment Report - East Side Fuel Gas Mix Drum H₂S CMS

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: B008, B009, B010

| CEMS Manufacturer: Siemens | | Model #: C | | CEMS Serial #: 30028039490020 | | | |
|-------------------------------|--|--|-----------------|----------------------------------|----------------|--|--|
| CEMS type: Hydrogen Sulf | de | CEMS sampling location: East Side Fuel Gas Mix Drum | | | | | |
| CEMS span values as j | CEMS span values as per the applicable regulation: | | | | | | |
| | <u>PPM</u> | | | | <u>Percent</u> | | |
| SO ₂ | | | O ₂ | | | | |
| H₂S | 300 | | CO ₂ | | | | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

| | | H2S (| (ppm) |
|----|-----------------------|--------------|--------------|
| | | Audit #1 | Audit #2 |
| 1. | Date of audit | 11/15/2021 | 11/15/2021 |
| 2. | Cylinder ID number | CC416478 | CC482384 |
| | Vendor | AirGas | AirGas |
| 3. | Date of certification | 12/8/2020 | 11/11/2019 |
| | Expiration date | 12/8/2023 | 11/11/2022 |
| 4. | Type of certification | EPA Protocol | EPA Protocol |
| 5. | Certified audit value | 74.18 | 163.50 |
| 6. | CEMS response values | 74.69 | 168.53 |
| | | 73.22 | 166.80 |
| | | 74.60 | 165.79 |
| | Average | 74.17 | 167.04 |
| 7. | Accuracy | -0.01% | 2.17% |

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

- 1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
- 2. Corrective action taken: NA
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - TIU Fuel Gas Mix Drum H2S CMS

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: B015, B017, B019, B022, B029, B030, B031, B032, B033, B034,

B035, P007

| CEMS Manufacturer: Siemens | | | CEMS Serial #: 3002011799930 | 0 | | | |
|--------------------------------|--|---|---------------------------------|---------|---|--|--|
| CEMS type: Hydrogen Sulfide | | ampling location: TIU Fuel Gas Mix Drum | | | CEMS sampling location: TIU Fuel Gas Mix Dru | | |
| CEMS span values as | CEMS span values as per the applicable regulation: | | | | | | |
| | <u>PPM</u> | | Perce | ent ent | | | |
| SO ₂ | | O ₂ | | | | | |
| H ₂ S | 300 | CO ₂ | | | | | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

| | 1100 | |
|--------------------------|--------------|--------------|
| | H2S (| (ppm) |
| | Audit #1 | Audit #2 |
| 1. Date of audit | 11/16/2021 | 11/16/2021 |
| 2. Cylinder ID number | CC416478 | CC482384 |
| Vendor | AirGas | AirGas |
| 3. Date of certification | 12/8/2020 | 11/11/2019 |
| Expiration date | 12/8/2023 | 11/11/2022 |
| 4. Type of certification | EPA Protocol | EPA Protocol |
| 5. Certified audit value | 74.18 | 163.50 |
| 6. CEMS response values | 74.47 | 164.58 |
| | 73.57 | 166.77 |
| | 73.25 | 164.27 |
| Average | 73.76 | 165.21 |
| 7. Accuracy | -0.57% | 1.05% |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
 - 2. Corrective action taken: NA
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - Reformer 3 Heater H₂S CMS

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: B036

| CEMS Manufacturer: Siemens | | Model #: CEMS S Maxim II | | Serial #: 30029994471080 | |
|--------------------------------|--|--|-----------------------|-----------------------------|----------------|
| CEMS type: Hydrogen Sulfide | | CEMS sampling location: Reformer 3 Heater Fuel Gas | | | as |
| CEMS span values as p | MS span values as per the applicable regulation: | | | | |
| | | PPM | | | <u>Percent</u> |
| SO ₂ | | | O ₂ | | |
| H₂S | | 300 | CO ₂ | | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

| | H2S (| (ppm) |
|--------------------------|--------------|--------------|
| | Audit #1 | Audit #2 |
| 1. Date of audit | 11/15/2021 | 11/15/2021 |
| 2. Cylinder ID number | CC416478 | CC482384 |
| Vendor | AirGas | AirGas |
| 3. Date of certification | 12/8/2020 | 11/11/2019 |
| Expiration date | 12/8/2023 | 11/11/2022 |
| 4. Type of certification | EPA Protocol | EPA Protocol |
| 5. Certified audit value | 74.18 | 163.50 |
| 6. CEMS response values | 74.25 | 162.93 |
| | 74.69 | 158.87 |
| | 76.11 | 162.64 |
| Average | 75.02 | 161.48 |
| 7. Accuracy | 1.13% | -1.24% |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
 - 2. Corrective action taken: NA
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - East Flare H₂S CMS

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P003

| CEMS Manufacturer: Siemens | | Model #: Maxim II | | CEMS | S Serial #: 30050531960100 |
|---|--|---------------------------------------|-----------------|------|-------------------------------|
| CEMS type: Hydrogen Sulfide | | CEMS sampling location: East Flare | | | |
| CEMS span values as per the applicable regula | | | tion: | | |
| | | <u>PPM</u> | | | <u>Percent</u> |
| SO ₂ | | | O ₂ | | |
| H₂S | | 300 | CO ₂ | | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - **A.** Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

| | H2S (| (ppm) |
|--------------------------|--------------|--------------|
| | Audit #1 | Audit #2 |
| 1. Date of audit | 11/16/2021 | 11/16/2021 |
| 2. Cylinder ID number | CC416478 | CC482384 |
| Vendor | AirGas | AirGas |
| 3. Date of certification | 12/8/2020 | 11/11/2019 |
| Expiration date | 12/8/2023 | 11/11/2022 |
| 4. Type of certification | EPA Protocol | EPA Protocol |
| 5. Certified audit value | 74.18 | 163.50 |
| 6. CEMS response values | 73.69 | 152.99 |
| | 72.97 | 160.37 |
| | 74.89 | 162.35 |
| Average | 73.85 | 158.57 |
| 7. Accuracy | -0.44% | -3.02% |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.

a. Dates: None

b. Number of days: NA

- 2. Corrective action taken: NA
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - West Flare H₂S CMS

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: P004

| CEMS Manufacturer: Model #: Siemens Maxim II | | | CEMS | S Serial #: 30050531960400 | |
|---|----------|---------------------------------------|-----------------|-------------------------------|----------------|
| CEMS type: Hydrogen Sulfide | С | CEMS sampling location: West Flare | | | |
| CEMS span values as per the applicable regula | | | tion: | | |
| | <u>P</u> | PPM | | | <u>Percent</u> |
| SO ₂ | | | O ₂ | | |
| H₂S | 3 | 300 | CO ₂ | | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - **A.** Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for H₂S (ppm):

| | H2S (| (ppm) |
|--------------------------|--------------|--------------|
| | Audit #1 | Audit #2 |
| 1. Date of audit | 11/17/2021 | 11/17/2021 |
| 2. Cylinder ID number | CC475533 | CC482384 |
| Vendor | AirGas | AirGas |
| 3. Date of certification | 10/5/2021 | 11/11/2019 |
| Expiration date | 10/5/2024 | 11/11/2022 |
| 4. Type of certification | EPA Protocol | EPA Protocol |
| 5. Certified audit value | 74.29 | 163.50 |
| 6. CEMS response values | 74.76 | 160.90 |
| | 74.07 | 161.97 |
| | 74.82 | 164.28 |
| Average | 74.55 | 162.38 |
| 7. Accuracy | 0.35% | -0.69% |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
 - 2. Corrective action taken: NA
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - East Flare TS CMS

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: P003

| | | Model #: Sola II | | CEMS Serial #: SL-10430115 |
|---|---------|---------------------|--------------------------------|-------------------------------|
| CEMS type: Total Sulfur | | CEMS sampling Ea | g <i>location:</i> st Flare | |
| CEMS span values as per the applicable regula | | | tion: | |
| | | <u>PPM</u> | | |
| TS (low) | 3,500 | | | |
| TS (high) | 350,000 | | | |

I. <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for TS Low (ppm) and TS High (ppm):

| ı | | | 1 | | |
|--------------------------|------------|------------|------------|--------------|--|
| | | | | | |
| | TS | Low | TS High | | |
| | Audit #1 | Audit #2 | Audit #1 | Audit #2 | |
| 1. Date of audit | 10/27/2021 | 10/27/2021 | 10/28/2021 | 10/28/2021 | |
| 2. Cylinder ID number | CC427785 | CC269487 | CC121778 | AA073391 | |
| Vendor | Airgas | Airgas | Airgas | Airgas | |
| 3. Date of certification | 3/13/2019 | 4/27/2021 | 3/18/2019 | 3/7/2019 | |
| Expiration date | 3/13/2022 | 4/27/2024 | 3/18/2027 | 3/7/2027 | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | EPA Protocol | |
| 5. Certified audit value | 884.0 | 1,931 | 87,110 | 192,500 | |
| 6. CEMS response values | 895.9 | 2,110 | 90,928 | 194,073 | |
| | 918.4 | 1,950 | 91,148 | 194,682 | |
| | 926.4 | 1,961 | 91,087 | 195,711 | |
| Average | 913.6 | 2,007.0 | 91,054 | 194,822 | |
| 7. Accuracy | 3.35% | 3.94% | 4.53% | 1.21% | |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.

a. Dates: None

b. Number of days: NA

2. Corrective action taken: NA

- 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - West Flare TS CMS

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: P004

| | | Model #: Sola II | | CEMS Serial #: SL-10440115 | |
|---|---------|---------------------|--------------------------|-------------------------------|--|
| CEMS type: Total Sulfur | | CEMS sampling | g location: est Flare | | |
| CEMS span values as per the applicable regula | | | tion: | | |
| | PPM | | | | |
| TS (low) | 3,500 | | | | |
| TS (high) | 350,000 | | | | |

I. <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for TS Low (ppm) and TS High (ppm):

| | TS Low | | TS High | | |
|--------------------------|------------|------------|------------|------------|--|
| | Audit #1 | Audit #2 | Audit #1 | Audit #2 | |
| 1. Date of audit | 10/26/2021 | 10/26/2021 | 10/26/2021 | 10/26/2021 | |
| 2. Cylinder ID number | CC315721 | CC89159 | CC62361 | CC874 | |
| Vendor | Airgas | Airgas | Airgas | Airgas | |
| 3. Date of certification | 3/13/2019 | 12/22/2020 | 3/18/2019 | 3/7/2019 | |
| Expiration date | 3/13/2022 | 12/22/2023 | 3/18/2027 | 3/7/2027 | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | RATA Class | |
| Certified audit value | 884.3 | 1,968.0 | 86,970 | 192,300 | |
| 6. CEMS response values | 934.3 | 2,024.4 | 91,473 | 199,142 | |
| | 939.6 | 2,011.5 | 91,284 | 200,568 | |
| | 942.6 | 2,092.7 | 91,611 | 199,571 | |
| Average | 938.8 | 2,042.9 | 91,456 | 199,760 | |
| 7. Accuracy | 6.16% | 3.81% | 5.16% | 3.88% | |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.

a. Dates: None

b. Number of days: NA

- 2. Corrective action taken: NA
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report – TIU Fuel Gas Mix Drum TS CMS

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: B015, B017, B019, B022, B029, B030, B031, B032, B033, B034,

B035, P007

| CEMS Manufacturer: ThermoFisher | | Model #: Sola II | | CEMS Serial #: SL-09030713 |
|------------------------------------|--|---|--|-------------------------------|
| CEMS type: Total Sulfur | | CEMS sampling location: TIU Fuel Gas Mix Drum | | |
| CEMS span values as | CEMS span values as per the applicable regulation: | | | |
| | | <u>PPM</u> | | |
| TS | | 3,500 | | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for:

| | TS (ı | opm) |
|--------------------------|------------|------------|
| | Audit #1 | Audit #2 |
| 1. Date of audit | 11/2/2021 | 11/2/2021 |
| 2. Cylinder ID number | CC338715 | CC218822 |
| Vendor | Airgas | Airgas |
| 3. Date of certification | 3/13/2019 | 3/31/2020 |
| Expiration date | 3/13/2022 | 3/31/2023 |
| 4. Type of certification | RATA Class | RATA Class |
| 5. Certified audit value | 884.70 | 1844.00 |
| 6. CEMS response values | 838.30 | 1981.01 |
| · | 869.11 | 1959.94 |
| | 855.16 | 1945.52 |
| Average | 854.19 | 1962.16 |
| 7. Accuracy | -3.45% | 6.41% |

- **C.** Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
 - 2. Corrective action taken: NA
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - Reformer 3 Heater NO_x/O₂ CEM

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: B036

| O ₂ CEMS Manufacturer: ABB | | Model #: MAGNOS 106 | CEI | MS Serial # 3.340932.7 |
|---|--|------------------------|-----------------------------|---------------------------|
| NO _x CEMS Manufacturer: ABB | | Model #: LIMAS 11 | CEMS Serial # 3.340287.1 | |
| CEMS sampling location: Reformer 3 Heater stack | | | | |
| CEMS span values as p | CEMS span values as per the applicable regulation: | | | |
| | <u>PPM</u> | | | <u>Percent</u> |
| SO ₂ | | O ₂ | | 25 |
| NO _x | 200 | CO ₂ | | |

I. <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for O2 (%) and NOx (ppm):

| | O2 (%) | | NOv (nnm) | | | |
|--------------------------|------------|------------|------------|------------|--|--|
| | | | NOx (ppm) | | | |
| | Audit #1 | Audit #2 | Audit #1 | Audit #2 | | |
| 1. Date of audit | 11/19/2021 | 11/19/2021 | 11/19/2021 | 11/19/2021 | | |
| 2. Cylinder ID number | CC278207 | BLM000740 | BLM004296 | LL10026 | | |
| Vendor | Airgas | Airgas | Airgas | Airgas | | |
| 3. Date of certification | 11/20/2017 | 10/4/2021 | 6/25/2020 | 11/12/2019 | | |
| Expiration date | 11/20/2025 | 10/4/2029 | 6/25/2028 | 11/12/2027 | | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | RATA Class | | |
| 5. Certified audit value | 5.97 | 14.09 | 54.81 | 117.20 | | |
| 6. CEMS response values | 6.07 | 14.12 | 54.74 | 115.99 | | |
| | 6.08 | 14.12 | 55.88 | 116.16 | | |
| | 6.07 | 14.12 | 56.06 | 116.25 | | |
| Average | 6.07 | 14.12 | 55.56 | 116.13 | | |
| 7. Accuracy | 1.68% | 0.21% | 1.37% | -0.91% | | |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods: None
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report – East Alstom Boiler NO_x/O₂ CEM

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: B034

| O ₂ CEMS Manufacturer: I ABB | | Model #: MAGNOS 106 | | | |
|--|--|------------------------|--|------------------------------|--|
| NO _x CEMS Manufacturer: ABB | | Model #: LIMAS 11 | | MS Serial # 0400003362206 | |
| CEMS sampling location | CEMS sampling location: East Alstom Boiler stack | | | | |
| CEMS span values as per the applicable regulation: | | | | | |
| | <u>PPM</u> | | | <u>Percent</u> | |
| SO ₂ | | O ₂ | | 20.0 | |
| NO _x | 100 | CO ₂ | | | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%):

| | O ₂ | | | | |
|--------------------------|----------------|--------------|------------|--|--|
| | Audit #1 | Audit #2 | Audit #3 | | |
| 1. Date of audit | 11/12/2021 | 11/12/2021 | 11/12/2021 | | |
| 2. Cylinder ID number | BLM005117 | SG9115771ALC | CC15126 | | |
| Vendor | Airgas | Airgas | Airgas | | |
| 3. Date of certification | 5/22/2020 | 11/16/2017 | 6/1/2020 | | |
| Expiration date | 5/22/2028 | 11/16/2025 | 6/1/2028 | | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | | |
| 5. Certified audit value | 5.55 | 11.04 | 17.96 | | |
| 6. CEMS response values | 5.41 | 10.87 | 17.68 | | |
| | 5.43 | 10.88 | 17.69 | | |
| | 5.43 | 10.88 | 17.69 | | |
| Average: | 5.42 | 10.88 | 17.69 | | |
| 7. Accuracy | -2.34% | -1.45% | -1.50% | | |

Cylinder gas audit (CGA) for NO_x (ppm):

| | NO _x | | | | |
|--------------------------|-----------------|-------------|------------|--|--|
| | Audit #1 | Audit #2 | Audit #3 | | |
| 1. Date of audit | 12/22/2021 | 12/22/2021 | 12/22/2021 | | |
| 2. Cylinder ID number | LL84223 | SG917946CAL | ALM046373 | | |
| Vendor | Airgas | Airgas | Airgas | | |
| 3. Date of certification | 12/14/2021 | 6/25/2020 | 4/30/2021 | | |
| Expiration date | 12/14/2024 | 6/25/2028 | 4/30/2029 | | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | | |
| 5. Certified audit value | 25.00 | 54.91 | 90.32 | | |
| 6. CEMS response values | 25.16 | 54.54 | 91.13 | | |
| | 25.20 | 55.12 | 90.59 | | |
| | 24.87 | 53.57 | 90.14 | | |
| Average: | 25.08 | 54.41 | 90.62 | | |
| 7. Accuracy | 0.32% | -0.91% | 0.33% | | |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report – West Alstom Boiler NO_x/O₂ CEM

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: B035

| O ₂ CEMS Manufacturer: ABB | | Model #: MAGNOS 106 | | MS Serial # 100003354606 | |
|--|--|------------------------|--|-----------------------------|--|
| NO _x CEMS Manufacturer: ABB | | Model #: LIMAS 11 | | MS Serial # 100003361106 | |
| CEMS sampling location | CEMS sampling location: West Alstom Boiler stack | | | | |
| CEMS span values as p | er the applicable regu | ılation: | | | |
| | <u>PPM</u> | | | <u>Percent</u> | |
| SO ₂ | | O ₂ | | 20.0 | |
| NO _x | 100 | CO ₂ | | | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%):

| | O_2 | | | | |
|--------------------------|------------|--------------|------------|--|--|
| | Audit #1 | Audit #2 | Audit #3 | | |
| 1. Date of audit | 11/12/2021 | 11/12/2021 | 11/12/2021 | | |
| 2. Cylinder ID number | BLM005117 | SG9115771ALC | CC15126 | | |
| Vendor | Airgas | Airgas | Airgas | | |
| 3. Date of certification | 5/22/2020 | 11/16/2017 | 6/1/2020 | | |
| Expiration date | 5/22/2028 | 11/16/2025 | 6/1/2028 | | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | | |
| 5. Certified audit value | 5.55 | 11.04 | 17.96 | | |
| 6. CEMS response values | 5.48 | 11.00 | 17.89 | | |
| | 5.50 | 11.00 | 17.89 | | |
| | 5.49 | 11.01 | 17.89 | | |
| Average: | 5.49 | 11.00 | 17.89 | | |
| 7. Accuracy | -1.08% | -0.36% | -0.39% | | |

B. Cylinder gas audit (CGA) for NO_x (ppm):

| | NO _x | | | | |
|--------------------------|-----------------|------------|------------|--|--|
| | Audit #1 | Audit #2 | Audit #3 | | |
| 1. Date of audit | 12/22/2021 | 12/22/2021 | 12/21/2021 | | |
| 2. Cylinder ID number | LL84223 | XL000366B | ALM046373 | | |
| Vendor | Airgas | Airgas | Airgas | | |
| 3. Date of certification | 12/14/2021 | 11/21/2017 | 4/30/2021 | | |
| Expiration date | 12/14/2024 | 11/21/2025 | 4/30/2029 | | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | | |
| 5. Certified audit value | 25 | 54.79 | 90.32 | | |
| 6. CEMS response values | 25.18 | 55.32 | 90.40 | | |
| · | 25.34 | 55.30 | 90.81 | | |
| | 25.57 | 55.02 | 90.51 | | |
| Average: | 25.36 | 55.21 | 90.57 | | |
| 7. Accuracy | 1.44% | 0.77% | 0.28% | | |

- **C. Relative accuracy audit (RAA) for:** (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report – FCC/CO Boiler SO₂/NO_x/CO/O₂ CEM

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: P007

| O ₂ CEMS Manufacturer: | | Nodel #: | CEI | MS Serial# | |
|--|-------------------|----------------|---------------|---------------|--|
| ABB | | Magnos 106 | | 3.340569.7 | |
| SO ₂ CEMS Manufacture | r: M | Nodel #: | CEI | MS Serial # | |
| ABB | | Limas 11 UV | | 3.340641.7 | |
| NO _x CEMS Manufacture | r: M | Nodel #: | CEMS Serial # | | |
| ABB | | Limas 11 UV | | 3.340641.7 | |
| CO CEMS Manufacturer | | | | CEMS Serial # | |
| ABB Automation | | URAS- 26 | | 3.347698.3 | |
| CEMS sampling location | : CO Boiler stack | | | | |
| CEMS span values as per the applicable regulation: | | | | | |
| SO ₂ | 400 PPM | O ₂ | | 10.0 % | |
| NO _x | 350 PPM | со | | 1000 PPM | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

| | O ₂ (pe | ercent) | SO ₂ (ppm) | | |
|--------------------------|--------------------|------------|-----------------------|------------|--|
| | Audit #1 | Audit #2 | Audit #1 | Audit #2 | |
| 1. Date of audit | 11/18/2021 | 11/18/2021 | 11/18/2021 | 11/18/2021 | |
| 2. Cylinder ID number | ALM001730 | CC423357 | ALM001730 | CC423357 | |
| Vendor | Airgas | Airgas | Airgas | Airgas | |
| 3. Date of certification | 2/14/2017 | 2/14/2017 | 2/14/2017 | 2/14/2017 | |
| Expiration date | 2/14/2025 | 2/14/2025 | 2/14/2025 | 2/14/2025 | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | RATA Class | |
| 5. Certified audit value | 2.49 | 5.53 | 98.98 | 219.40 | |
| 6. CEMS response values | 2.52 | 5.52 | 101.97 | 223.58 | |
| | 2.52 | 5.52 | 103.90 | 224.87 | |
| | 2.52 | 5.52 | 104.42 | 225.39 | |
| Average | 2.52 | 5.52 | 103.43 | 224.61 | |
| 7. Accuracy | 1.20% | -0.18% | 4.50% | 2.37% | |

B. Cylinder gas audit (CGA) for NO_x (ppm) and CO (ppm):

| | NO _x (| (ppm) | CO (| ppm) | |
|--------------------------|-------------------|------------|------------|------------|--|
| | Audit #1 | Audit #2 | Audit #1 | Audit #2 | |
| 1. Date of audit | 11/18/2021 | 11/18/2021 | 11/18/2021 | 11/18/2021 | |
| 2. Cylinder ID number | XC030834B | CC222300 | XC030834B | CC222300 | |
| Vendor | Airgas | Airgas | Airgas | Airgas | |
| 3. Date of certification | 2/14/2017 | 2/14/2017 | 2/14/2017 | 2/14/2017 | |
| Expiration date | 2/14/2025 | 2/14/2025 | 2/14/2025 | 2/14/2025 | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | RATA Class | |
| 5. Certified audit value | 80.86 | 187.80 | 249.50 | 551.00 | |
| 6. CEMS response values | 76.94 | 181.90 | 253.10 | 557.97 | |
| | 77.77 | 183.61 | 253.86 | 556.93 | |
| | 78.44 | 182.25 | 253.86 | 556.83 | |
| Average | 77.72 | 182.59 | 253.61 | 557.24 | |
| 7. Accuracy | -3.88% | -2.77% | 1.65% | 1.13% | |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report - FCC Regen Line SO₂/NO_x/CO/O₂/CO₂ CEM

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P007

| SO ₂ CEMS Manufacturer: ABB | | Model #: (Limas 11 UV | | CE | CEMS Serial # 3.240685.3 | |
|---|------------------------|---------------------------|--|----|-----------------------------|--|
| NO _x CEMS Manufacturer: ABB | | Model #: (Limas 11 UV | | CE | MS Serial # 3.240682.3 | |
| CO CEMS Manufacturer: ABB | | | del #: CEMS Serial # URAS 14 3.240684.3 | | | |
| O ₂ CEMS Manufacturer: | | Мо | del #: | CE | MS Serial # | |
| ABB | ABB | | Magnos 206 0 | | 01400101195301 | |
| CO ₂ CEMS Manufacture ABB | r: | | flodel #: CE Limas 11 UV | | EMS Serial # 3.240682.3 | |
| CEMS sampling location | : FCC Regen Line s | tack | | | | |
| CEMS span values as pe | er the applicable regu | ulatic | on: | | | |
| SO ₂ | 500 PPM | O ₂ | | | 25.0 % | |
| NOx | 200 PPM | со | | | 1000 PPM | |
| CO ₂ | 50.0 % | | | | _ | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audit (RATA): (Not applicable this quarter)
 - B. Cylinder gas audit (CGA) for O_2 (%) and SO_2 (ppm):

| | O ₂ (pe | ercent) | SO ₂ (ppm) | | |
|--------------------------|--------------------|------------|-----------------------|------------|--|
| | Audit #1 | Audit #2 | Audit #1 | Audit #2 | |
| 1. Date of audit | 11/10/2021 | 11/10/2021 | 11/10/2021 | 11/10/2021 | |
| 2. Cylinder ID number | XL001104B | BLM004046 | CC443275 | CC82139 | |
| Vendor | Airgas | Scott | Airgas | Airgas | |
| 3. Date of certification | 11/20/2017 | 11/19/2015 | 11/21/2017 | 11/21/2017 | |
| Expiration date | 11/20/2025 | 11/20/2023 | 11/21/2025 | 11/21/2025 | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | RATA Class | |
| 5. Certified audit value | 5.49 | 13.90 | 130.70 | 267.60 | |
| 6. CEMS response values | 5.50 | 14.05 | 129.54 | 267.84 | |
| | 5.53 | 14.05 | 133.24 | 270.23 | |
| | 5.54 | 14.06 | 134.25 | 271.21 | |
| Average | 5.52 | 14.05 | 132.34 | 269.76 | |
| 7. Accuracy | 0.55% | 1.08% | 1.25% | 0.81% | |

B. Cylinder gas audit (CGA) for NO_x (ppm) and CO (ppm):

| | NO _x (| (ppm) | CO (ppm) | | |
|--------------------------|-------------------|-------------|------------|------------|--|
| | Audit #1 Audit #2 | | Audit #1 | Audit #2 | |
| 1. Date of audit | 11/10/2021 | 11/10/2021 | 11/10/2021 | 11/10/2021 | |
| 2. Cylinder ID number | LL34302 | BAL3120 | XL002639B | BAL3034 | |
| Vendor | Airgas | Air Liquide | Airgas | Scott | |
| | 11/21/2017 | 8/12/2014 | 11/6/2017 | 11/12/2013 | |
| Date of certification | | | | | |
| Expiration date | 11/21/2025 | 8/13/2022 | 11/6/2025 | 11/13/2021 | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | RATA Class | |
| 5. Certified audit value | 54.90 | 116.00 | 277.60 | 543.00 | |
| 6. CEMS response values | 54.56 | 113.09 | 285.03 | 554.59 | |
| | 56.20 | 114.13 | 285.56 | 554.82 | |
| | 56.00 | 114.25 | 285.59 | 554.85 | |
| Average | 55.59 | 113.82 | 285.39 | 554.75 | |
| 7. Accuracy | 1.26% | -1.88% | 2.81% | 2.16% | |

B. Cylinder gas audit (CGA) for CO₂ (ppm):

| | CO ₂ | (ppm) |
|--------------------------|-----------------|------------|
| | Audit #1 | Audit #2 |
| 1. Date of audit | 11/10/2021 | 11/10/2021 |
| 2. Cylinder ID number | ALM063125 | CC472694 |
| Vendor | Scott | Scott |
| 3. Date of certification | 9/24/2018 | 9/24/2018 |
| Expiration date | 9/24/2026 | 9/24/2026 |
| 4. Type of certification | RATA Class | RATA Class |
| 5. Certified audit value | 13.11 | 27.20 |
| 6. CEMS response values | 13.82 | 28.00 |
| | 13.93 | 28.07 |
| | 13.95 | 28.08 |
| Average | 13.90 | 28.05 |
| 7. Accuracy | 6.03% | 3.13% |

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

- 1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
- 2. Corrective action taken:
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – Sulfur Recovery Unit (SRU #1) SO₂/O₂ CEM

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery

Source unit #: P009

| SO ₂ CEMS Manufactur | er: | Model #: | | CEMS S | |
|--|--------------|-------------|----------------|--------|------------------|
| Ametek | | 919 | 9 | | ZB-919SP-10541-1 |
| O ₂ CEMS Manufacture | r: | Model #: | | CEMS S | erial #: |
| Ametek | | 919 | 9 | | ZB-919SP-10541-1 |
| CEMS sampling location | n: SRU Therm | al Oxidizer | | | |
| CEMS span values as per the applicable regulation: | | | | | |
| | PPM | <u>1</u> | | | <u>Percent</u> |
| SO ₂ | 500 | 1 | O ₂ | | 10.0 |
| NO _x | | | СО | 2 | |

- I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

| | O ₂ pe | ercent | SO ₂ ppm | | |
|--------------------------|-------------------|------------|---------------------|--------------|--|
| | Audit #1 | Audit #2 | Audit #1 | Audit #2 | |
| 1. Date of audit | 11/1/2021 | 11/1/2021 | 11/1/2021 | 11/1/2021 | |
| 2. Cylinder ID number | ALM028323 | CC13867 | XC006260B | ALM004131 | |
| Vendor | Airgas | Airgas | Airgas | Airgas | |
| 3. Date of certification | 9/13/2016 | 11/20/2017 | 2/24/2017 | 2/14/2017 | |
| Expiration date | 9/13/2024 | 11/20/2025 | 2/24/2025 | 2/14/2025 | |
| 4. Type of certification | RATA Class | RATA Class | RATA Class | EPA Protocol | |
| 5. Certified audit value | 2.52 | 5.98 | 124.00 | 268.70 | |
| 6. CEMS response values | 2.54 | 5.99 | 123.72 | 268.60 | |
| | 2.61 | 6.00 | 126.92 | 271.74 | |
| | 2.59 | 6.00 | 127.07 | 270.94 | |
| Average | 2.58 | 6.00 | 125.90 | 270.43 | |
| 7. Accuracy | 2.38% | 0.33% | 1.53% | 0.64% | |

- **C. Relative accuracy audit (RAA) for:** (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.

 - a. Dates:b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Data Assessment Report – Sulfur Recovery Unit #2 and #3 (TRP SRU) SO₂/O₂ CEM

Period ending date: December 31 Year: 2021

Company name: BP-Husky Refining LLC Plant name: Toledo Refinery

Source unit #: P037

| SO ₂ CEMS Manufactu | MS Manufacturer: Model #: | | | CEMS Serial #: | |
|---|---------------------------|----------|--|-----------------|--------|
| Ametek | | 919 | | ZX-919-1 | 0814-1 |
| O ₂ CEMS Manufacture | er: | Model #: | | CEMS Serial #: | |
| Ametek | | 919 | | ZX-919-1 | 0814-1 |
| CEMS sampling location: TGT #2 Thermal Oxidizer stack | | | | | |
| CEMS span values as per the applicable regulation: | | | | | |
| | <u>PPM</u> | | | <u>Percent</u> | |
| SO ₂ | į | 500 | | O ₂ | 10.0 |
| NO _x | | | | CO ₂ | |

- **I.** <u>Accuracy assessment results</u> (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)
 - A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)
 - B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

| | O ₂ pe | ercent | SO₂ ppm | | |
|--------------------------|-------------------|-------------------|------------|--------------|--|
| | Audit #1 | Audit #1 Audit #2 | | Audit #2 | |
| 1. Date of audit | 11/1/2021 | 11/1/2021 | 11/1/2021 | 11/1/2021 | |
| 2. Cylinder ID number | ALM028323 | CC13867 | XC006260B | ALM004131 | |
| Vendor | Airgas | Airgas | Airgas | Airgas | |
| 3. Date of certification | 9/13/2016 | 11/20/2017 | 2/24/2017 | 2/14/2017 | |
| Expiration date | 9/13/2024 | 11/20/2025 | 2/24/2025 | 2/14/2025 | |
| Type of certification | RATA Class | RATA Class | RATA Class | EPA Protocol | |
| 5. Certified audit value | 2.52 | 5.98 | 124.00 | 268.70 | |
| 6. CEMS response values | 2.48 | 5.97 | 123.41 | 267.00 | |
| | 2.51 | 5.97 | 131.35 | 267.46 | |
| | 2.50 | 5.97 | 130.58 | 268.23 | |
| Average | 2.50 | 5.97 | 128.45 | 267.56 | |
| 7. Accuracy | -0.79% | -0.17% | 3.59% | -0.42% | |

- C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)
- D. Corrective action for excessive inaccuracy.
 - 1. Out-of-control periods.
 - a. Dates:
 - b. Number of days:
 - 2. Corrective action taken:
 - 3. Results of audit following corrective action. (Use format of A, B, or C above.)
- II. Calibration drift assessment See Tables B1 & B2

Table B1 - Calibration Drift Assessment; Out-of-Control Periods for Part 60

| CEMS | Start Time | End Time | Hours | Corrective Action Taken |
|----------|----------------|------------------|-------|--|
| TIUMD TS | 10/1/2021 9:00 | 10/3/2021 6:00 | 45 | Recalibrated and Returned Analyzer to service |
| WF H2S | 11/9/2021 6:00 | 11/10/2021 10:00 | 28 | Started troubleshooting sample flow, recalibrated for drift, and returned to service |

Table B2 – Calibration Drift Assessment; Out-of-Control Periods for Part 63

| CEMS | Start Time | End Time | Hours | Corrective Action Taken |
|-----------|-----------------|-----------------|-------|---|
| TRP SO2 | 12/2/2021 7:00 | 12/2/2021 9:00 | 2 | Recalibrated and Returned Analyzer to service. |
| TRP SO2 | 12/16/2021 7:00 | 12/16/2021 9:00 | 2 | Recalibrated and Returned Analyzer to service. |
| SRU 1 SO2 | 12/27/2021 7:00 | 12/27/2021 9:00 | 2 | Recalibrated and Returned Analyzer to service. |

Per 40 CFR Part 63.8(c)(7)(i), a CMS is out of control if the zero, mid-level, or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard. These instances are reported in Table B2 above.